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ABSTRACT:

PROBLEM TO BE SOLVED: To enjoy playing until the end without losing interest in the middle by providing a difficulty level discrimination means for judging the ability of a player and controlling the progress of a game while successively selecting a map screen recorded in a storage means corresponding to the ability of the player judged there.

SOLUTION: At the time of the game, a CPU circuit 7 judges whether or not the difficulty level of the player is established (set) first, and when it is not

established, establishes the difficulty level, then selects a rank map screen (stage, round and area or the like) corresponding to the difficulty level, from a flexible map table and sets a map. In the setting of the difficulty level, it is established by a height and a body weight, etc., at the time of start and based on the quickness, hitting rate and point rate, etc., of the operation of an operation unit 2 during the progress of the game. Then, a game processing is performed for the selected map and the difficulty of the game of the next time is automatically established corresponding to the ability at the time.

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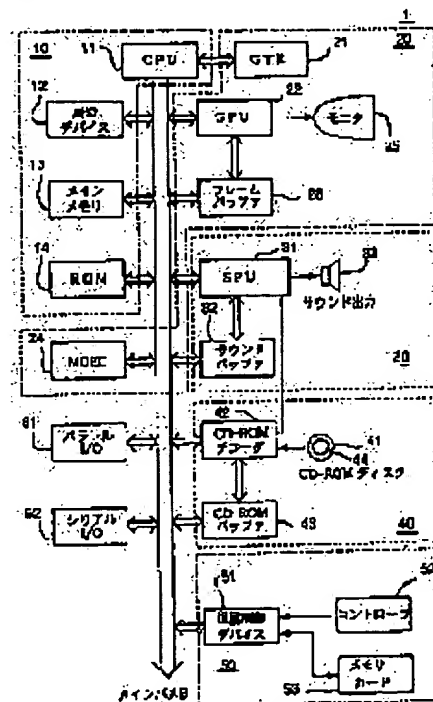
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(54) GAME SYSTEM AND COMPUTER-READABLE STORAGE MEDIUM

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a game system capable of comfortably operating the operational member of an input device to the rhythms of music, or the like.

SOLUTION: A game system is provided with an input device 52 to output signals corresponding to the operational state of a plurality of operating members, a storage device to store data defining operation timing during a game concerned with each of a predetermined number of operation object parts to be allotted to at least a part of the operating members on the input device 52, and a game control device 11 to execute a predetermined game on the screen of a display device while making a reference to the output signals from the input device 52 and the data stored in the storage device. In the game system, a first mode to set the number of the operation object parts to be used for a game at a predetermined number or a second mode to restrict it fewer than the predetermined number is selected according to an instruction from a player. Only the operation of the predetermined number of the operation object parts is instructed to the player through a game screen at the time when the first mode is selected, and only the operation of a fewer number of the operation object parts than the predetermined number is instructed to the player at the time when the second mode is selected.



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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] This invention relates to the game system constituted in order to enjoy actuation according to music etc.

[0002]

[Description of the Prior Art] In this kind of game system, it is assigned as the section for actuation which a part of two or more operating members [at least] prepared in the input unit of a game use in a game, and the actuation timing in the game about the section for these actuation is beforehand set up according to predetermined music. Initiation of a game gives directions to a player through a game screen so that predetermined music may be interlocked with and each section for actuation may be operated to the set-up timing. If a player operates an operating member to the directions, the accuracy of the actuation will be distinguished, play results will be determined based on the distinction result, and it will be reported to a player.

[0003]

[Problem(s) to be Solved by the Invention] In order for a correlation to be between the number of the sections for actuation, and the difficulty of a game and to be able to enjoy a game in the game system mentioned above for a long period of time, it is desirable the increase of a number and to carry out and to set [of the section for actuation] up difficulty more highly. When it is difficult for the player which is not used to a game on the other hand to operate it exactly, checking much sections for actuation with the directions in a screen and there are many sections for actuation, there is a possibility that the interest over a game may be spoiled on the contrary. Moreover, when there are many sections for actuation, it becomes difficult to grasp the correspondence relation between the directions in a screen and the operating member on an input unit, and derangement may be produced to the player which is not used to a game.

[0004] Then, in case this invention performs the game which makes the operating member of an input unit operate it according to a musical rhythm etc., it aims at offering the game system which can set up the suitable operating environment which balanced the level to the player.

[0005]

[Means for Solving the Problem] Hereafter, this invention is explained. In addition, although a reference mark of an accompanying drawing is written in addition in parenthesis writing in order to make an understanding of this invention easy, thereby, this invention is not limited to a gestalt of illustration.

[0006] Invention of claim 1 is equipped with a display (20) which displays a game screen, and two or more operating members (PB1-PB14, PB21-PB31) which receive actuation by player. An input unit which outputs a signal corresponding to an actuation condition of these operating members (52A, 52B), Storage which memorizes actuation timing data which defined actuation timing in a game about each of the section for actuation of a predetermined number assigned to said a part of two or more operating members [at least] (44 13), A game control unit (11) which performs a game according to a predetermined procedure on a screen of said display, referring to an output signal from said input unit and data recorded on said storage is provided. It is based on said game control unit during activation of said game at said actuation timing data. An operator guidance means to display an image (101) it is directed that operates each of the section for actuation of said predetermined number to timing defined with said actuation timing data on a screen of said display, The 1st mode in which the number of said sections for actuation used in said game is set as said predetermined number, A mode selection means to choose from said predetermined number either of the 2nd mode restricted to a small number according to directions from a player, When said game is performed in said 2nd mode, so that only actuation of a number smaller than said predetermined number of sections for actuation may be directed An operator guidance limit means to change said image which is displayed by said operator guidance means and to direct, An evaluation means to evaluate actuation of said input unit of said player performed to directions from said operator guidance means based on said actuation timing data, A technical problem mentioned above is solved by game system by which an evaluation information means to tell said player about information relevant to an evaluation result by said evaluation means was established.

[0007] If according to this invention the 2nd mode is chosen and a game is performed, it will decrease rather than a case where the number of the sections for actuation with which actuation is directed to a player through a screen of a display chooses the 1st mode, and performs a game. Therefore, it is not necessary to reduce difficulty in the 2nd mode relatively and

to reduce difficulty in the 1st mode in a game in consideration of an unfamiliar player rather than the 1st mode. Thereby, a suitable operating environment doubled with level of a player can be offered.

[0008] Invention of claim 2 is set to a game system according to claim 1. Said operator guidance means As an image which directs actuation of the section for actuation of said predetermined number While displaying a gage (101) which has an index (103) to show actuation timing of the section for actuation corresponding to each of the section for actuation of said predetermined number which could classify into an parallel truck (102a-102i) mutually, and was matched with each truck So that said index may arrive at a predetermined location in said gage, when actuation timing of the section for actuation corresponding to each truck comes According to advance of said game, a display position of said index is gradually changed along said truck. Said operator guidance limit means It is characterized by adding the image effect of making a player recognizing actuation of the section for [said] the actuation corresponding to [as opposed to / mutually / some trucks (for example, 102a, 102b, 102h, 102i) among parallel trucks] the truck concerned being unnecessary. Therefore, in the 1st mode, all trucks will be used for directions of actuation and some trucks will be used for directions of actuation in the 2nd mode. Therefore, the number of trucks at which a player should gaze in the 2nd mode decreases, and, thereby, difficulty of a game falls.

[0009] Invention of claim 3 is characterized by said image effect being the processing to which lightness of some said trucks is reduced in a game system according to claim 2. Therefore, a player can be made to understand clearly that it is not necessary to pay a gaze about some trucks.

[0010] Invention of claim 4 is characterized by locating said some of trucks in an edge about a direction where said truck of said gage was put in order in a game system according to claim 3. Therefore, when a game is performed in the 2nd mode, a player should gaze only at a truck arranged among two or more trucks at a central site, and can grasp directions of actuation more easily.

[0011] While a sound output unit (30) which outputs a predetermined sound is formed in a game system according to claim 1, invention of claim 5 Music data and sound effect data for making a sound effect corresponding to actuation of predetermined music and said section for actuation output to said storage (44 13) from said sound output unit, respectively are recorded. A music playback directions means to make said game control unit (11) output said music based on said music data from said sound output unit during activation of said game, A sound effect output directions means to which answer actuation of an operating member assigned as said section for actuation, and a predetermined sound effect based on said sound effect data is made to output from said sound output unit, When said game is performed in said 2nd mode, inside of the section for actuation of said predetermined number, In said 1st mode, actuation is directed by said operator guidance means. A sound effect auto-output directions means to which the section for actuation actuation is not instructed to be in said 2nd mode regards it as what was operated to timing specified with said actuation timing data, and makes a sound effect corresponding to the actuation output based on said sound effect data from said sound output unit, **** eclipse ***** -- it is characterized by things. 12

[0012] According to this invention, music is played according to advance of a game, and if an input unit is operated to compensate for directions given through a display, to compensate for that actuation, a sound effect will put on music. Therefore, sensation which performs a game rhythmically according to music can be given to a player, and pleasure of a game can be increased. And in the 2nd mode, since it is regarded as that by which the section for actuation to which directions of actuation are abbreviated was operated to predetermined actuation timing and a sound effect corresponding to the actuation piles up automatically, the same pleasure as the 1st mode can be given to a player.

[0013] Invention of claim 6 is set to a game system according to claim 1. Said mode selection means It has a mode check means to ask a player any shall be chosen between said 1st mode or said 2nd mode before a game is performed by the beginning after predetermined initialization actuation is performed to said game system. It is characterized by being based on directions of said player to an inquiry through the mode check means, and choosing one [a gap or] mode.

[0014] According to this invention, after initialization actuation to a game system, before a game is performed by the beginning, a player is asked about by any it shall play between the 1st mode or the 2nd mode with a mode check means. Therefore, an opportunity to choose the suitable mode for self to a player is given certainly.

[0015] In a game system according to claim 6, two or more connection of said input unit (52A, 52B) of invention of claim 7 is enabled to said game control unit (11). Said mode selection means is characterized by having a check control means which forbids said inquiry, when an inquiry of mode selection by said mode check means is permitted when it distinguishes whether two or more input units are connected and it is judged to be an unit, and it is judged to be plurality.

[0016] Since according to this invention one player will operate much sections for actuation when only a singular input unit is connected, before a game is started, an opportunity to choose either of the 1st mode and the 2nd mode can be given certainly, and a possibility that a player which is not used to a game may start a game in the 1st mode in which difficulty is carelessly high can be abolished. On the other hand, a possibility that difficulty of a game will fall relatively in order that two or more players may share and play the section for actuation of a predetermined number, when two or more input units are connected, and the 2nd mode will be chosen is small. Therefore, unless it assigns the 1st mode as default setting after initialization actuation, he is conscious especially before game initiation and a player chooses the 2nd mode, it is convenient to set up so that a game may be started in the 1st mode.

[0017] An auxiliary storage unit (53) with which invention of claim 8 can record information about play career of a player in a game system according to claim 6 is formed possible [connection] to said game control unit (11). Said mode selection

means distinguishes whether after said predetermined initialization actuation is performed, information which shows career played in said 1st mode to said auxiliary storage unit before a game is performed by the beginning is recorded. When an inquiry of mode selection by said mode check means is permitted when it is judged that there is no play career in the 1st mode, and said play career judges it as plurality, it is characterized by having a check control means which forbids said inquiry.

[0018] When career which a player played in the 1st mode to an auxiliary storage unit is not being recorded according to this invention, selection in the mode is asked before starting a game first after initialization actuation. On the other hand, henceforth, after recording career played in the 1st mode, even if it performs initialization actuation, mode selection is not asked before game initiation. Therefore, while giving an opportunity of mode selection certainly before game initiation to a player without experience still played in the 1st mode, to a player with experience played in the 1st mode, time and effort according to a check of mode selection can be saved, and a game can be made to start immediately.

[0019] Invention of claim 9 is equipped with a display (20) which displays a game screen, and two or more operating members (PB1-PB14, PB21-PB31) which receive actuation by player. An input unit which outputs a signal corresponding to an actuation condition of these operating members (52A, 52B), Quota data which defined correspondence relation of said two or more operating members and section for actuation of a predetermined number used on a game, And storage which memorizes actuation timing data which defined actuation timing in a game about each of said section for actuation (44 13), A game control unit (11) which performs a game according to a predetermined procedure on a screen of said display, referring to an output signal from said input unit and data recorded on said storage is provided. It is based on said game control unit during activation of said game at said actuation timing data. An operator guidance means to display an image (101) it is directed that operates each of the section for actuation of said predetermined number to timing defined with said actuation timing data on a screen of said display, An evaluation means to evaluate actuation of said input unit of said player performed to directions from said operator guidance means based on data which defined said actuation timing, An evaluation information means to tell said player about information relevant to an evaluation result by said evaluation means, Based on said quota data, a technical problem mentioned above is solved by game system by which a quota information presentation means to show information for specifying relation between said two or more operating members and said section for actuation to a player was established.

[0020] According to this invention, a player can grasp now easily correspondence relation between the section for actuation in which use is planned on a game, and an actual operating member prepared in an input unit by referring to information which a quota information presentation means presents. Therefore, a game can be comfortably enjoyed also with an unfamiliar player in a game, without getting confused on operating instructions.

[0021] It is characterized by displaying an indicator for invention of claim 10 distinguishing each of two or more of said operating members (PB1-PB12) to said input unit (52A) in a game system according to claim 9, and said quota information presentation means displaying an image which imitated said indicator as said information. Therefore, correspondence relation with a screen displayed on a screen of an indicator with which it was expressed by input unit, and a display etc. is clarified, and correspondence relation between the section for actuation and an actual operating member can be more easily grasped now.

[0022] Invention of claim 11 is characterized by said quota information presentation means displaying said information on a screen of said display in a game system according to claim 9 or 10. Therefore, assignment of an operating member can be checked easily, gazing at operator guidance displayed on a screen of a display.

[0023] A subdisplay (70) with which invention of claim 12 differs from said display on said input unit in a game system according to claim 9 or 10 is prepared, and said quota information presentation means is characterized by displaying said information on a screen of said display.

[0024] According to this invention, since correspondence relation between said section for actuation and an actual operating member can be grasped on a screen of a subdisplay of an input unit, it can carry out more quickly [a check correspondence-related / said] and easily.

[0025] While two or more connection of said input unit (52A, 52B) of invention of claim 13 is enabled to said game control unit (11) in a game system according to claim 9 or 10 A different subdisplay (70) from said display corresponding to each of an input unit of these plurality is prepared, and said quota information presentation means is characterized by displaying said information on a screen of said subdisplay. When dividing and assigning the section for actuation used in a game to two or more input units according to this invention, assignment of the section for actuation about an input unit matched with these secondary display can be displayed on a screen of each *****. Facilities can be given to grasp correspondence-related said] in case two or more displays are used thereby especially.

[0026] Invention of claim 14 is set to a game system according to claim 9 or 10. An information-display selection means to choose whether information for specifying relation with said section for actuation is displayed according to directions from a player, When presenting of said information is chosen with said information-display selection means, presenting of said information by said quota information presentation means is permitted. When a display halt of said information is chosen, it is characterized by preparing a quota information-display control means which forbids presenting of said information by said quota information presentation means, and ** in said game control unit (11).

[0027] According to this invention, according to liking of a player, it can choose whether information for specifying relation between said two or more operating members and said section for actuation is displayed.

[0028] Invention of claim 15 is set to a game system according to claim 9 or 10. Said operator guidance means As an image which directs actuation of the section for actuation of said predetermined number While displaying a gage (101) which has an index (103) to show actuation timing of the section for actuation corresponding to each of the section for actuation of said predetermined number which could classify into an parallel truck (102a-102i) mutually, and was matched with each truck So that said index may arrive at a predetermined location in said gage, when actuation timing of the section for actuation corresponding to each truck comes According to advance of a game, a display position of said index is gradually changed along said truck, and said quota information presentation means is characterized by displaying information for specifying relation between said two or more operating members and said section for actuation near said predetermined location in said gage.

[0029] Since according to this invention a player gazes at a predetermined location in a gage and strives for grasp of actuation timing, when said quota information presentation means presents information near that predetermined location, movement magnitude of a look of a player at the time of checking that information can be held down to min, and a player can play a game more comfortably.

[0030] Invention of claim 16 is set to a game system according to claim 9 or 10. A quota modification means to change correspondence relation of said two or more operating members and section for actuation of a predetermined number used on a game according to directions from a player, It is characterized by forming a renewal means of data to update said quota data recorded on said storage according to modification of assignment by said quota modification means in said game control unit (11).

[0031] Since a player makes a setting change of the correspondence relation of said two or more operating members and section for actuation of a predetermined number used on a game according to that liking according to this invention, a player can play more comfortably.

[0032] Invention of claim 17 Actuation timing data which defined actuation timing in a game about each of the section for actuation of a predetermined number assigned to a part of two or more operating members [at least] (PB1-PB14, PB21-PB31) prepared in an input unit (52A, 52B) of a game system, A computer (11) formed in said game system It is the storage (44 13) with which a program for making it function as a game control unit which performs a game according to a predetermined procedure, referring to an output signal and said actuation timing data from said input unit was recorded and in which computer reading is possible. Said program Said computer is based on said actuation timing data during activation of said game. Each of the section for actuation of said predetermined number with said actuation timing data An operator guidance means to display an image it is directed that operates it to defined timing on a screen of a display of said game system; The 1st mode in which the number of said sections for actuation used in said game is set as said predetermined number, A mode selection means to choose from said predetermined number either of the 2nd mode restricted to a small number according to directions from a player; When said game is performed in said 2nd mode, So that only actuation of a number smaller than said predetermined number of sections for actuation may be directed An operator guidance limit means to change said image which is displayed by said operator guidance means and to direct; actuation of said input unit of said player performed to directions from said operator guidance means With a storage (44 13) which was constituted so that it might be made to function as an evaluation information means to tell said player about information relevant to an evaluation result by evaluation means; evaluated based on said actuation timing data, and said evaluation means and in which computer reading is possible A technical problem mentioned above is solved.

[0033] According to this invention, a game system of invention of claim 1 is realizable by making a computer read a program recorded on a storage, and performing it.

[0034] It assigns. invention of claim 18 defined correspondence relation between two or more operating members (PB1-PB14, PB21-PB31) on an input unit (52A, 52B) prepared in a game system, and the section for actuation of a predetermined number used on a game -- with data Actuation timing data which defined actuation timing in a game about each of said section for actuation, A computer (11) formed in said game system An output signal from said input unit, It is the storage (44 13) with which a program for making it function as a game control unit which performs a game according to a predetermined procedure, referring to said quota data and said actuation timing data was recorded and in which computer reading is possible. Said program Said computer is based on said actuation timing data during activation of said game. Each of the section for actuation of said predetermined number with said actuation timing data An operator guidance means to display an image it is directed that operates it to defined timing on a screen of said display; actuation of said input unit of said player performed to directions from said operator guidance means An evaluation means to evaluate based on data which defined said actuation timing; It is based on evaluation information means; which tells said player about information relevant to an evaluation result by said evaluation means, and said quota data. A technical problem mentioned above is solved with a storage (44 13) which was constituted so that it might be made to function as a quota information presentation means to show a player information for specifying relation between said two or more operating members and said section for actuation and in which computer reading is possible.

[0035] According to this invention, a game system of invention of claim 9 is realizable by making a computer read a program recorded on a storage, and performing it.

[0036]

[Embodiment of the Invention] Drawing 1 shows the gestalt which carried out this invention as a home video game system. In addition, a computer-game machine for home use has the configuration of drawing 1 , and the details are indicated [general]

by JP,8-212377,A.

[0037] The game system 1 of drawing 1 possesses the main control section 10, the graphic control section 20, the sound control section 30, the disk read station 40, and the communications control section 50, and each part 10-50 is connected mutually in Maine Bath B. The main-control section 10 is equipped with CPU11 which is constituted considering a microprocessor as a subject and performs operation required for advance of a game, and control of each part, the peripheral device 12 which performs auxiliary control of the interrupt control to the CPU11, management of memory access, etc., the main memory 13 which consisted of rewritable semiconductor storage elements of RAM etc., and ROM14 which memorized the program for controlling fundamental actuation of the game system 1.

[0038] The graphic control section 20 follows directions from CPU11. A specific operation required for image drawing, For example, the geometry transfer engine 21 as a co-processor which performs the coordinate operation of the polygon for drawing a three-dimension image etc. (GTE), The graphics processing unit 22 which performs predetermined drawing processing according to the drawing instruction from CPU11 (GPU), It has the frame buffer 23 as a means to memorize temporarily the data which the GPU22 drew, and the image decoder (MDEC) 24 which decrypts the compressed data of the image which main memory 13 memorizes. During advance of a game, the image data recorded on CD-ROM44 as a storage is loaded to main memory 13 if needed, is decrypted by MDEC24, and is drawn by the frame buffer 23 by GPU22. And the field of the arbitration of the image frame drawn by the frame buffer 23 is displayed on a monitor 25 (for example, CRT of a home television set).

[0039] The sound control section 30 is equipped with the sound regeneration processor (SPU) 31 which generates musical sound, a sound effect, etc., the sound buffer 32 data, sound source data, etc., such as voice by which reading appearance was carried out from CD-ROM44, and musical sound, are remembered to be and which is 512 K bytes, for example, and the loudspeaker 33 as a sound output means to output the musical sound generated by SPU31, a sound effect, etc., based on the directions from CPU11.

[0040] SPU31 is equipped with the ADPCM decode function which reproduces the voice data by which adaptation differential encoding (ADPCM) was carried out considering 16-bit voice data as a 4-bit differential signal, the regenerative function which generates a sound effect etc. by reproducing the sound source data memorized by the sound buffer 32, the modulation function which is made to modulate the voice data memorized by the sound buffer 32, and is reproduced. That is, SPU31 has functions, such as automatic conversion of the operational parameter which made looping and time amount the coefficient, builds in the ADPCM sound source which has the capacity of 24 voices, and operates by actuation from CPU11. Moreover, SPU31 manages the original address space where the sound buffer 32 was mapped, transmits ADPCM data to a sound buffer 32 from CPU11, and reproduces data by passing Keown / key-off, and MODEYURESHON information directly.

[0041] By having such a function, the sound control section 30 can be used now as the so-called sampling sound source which generates musical sound, a sound effect, etc. based on the voice data recorded on the sound buffer 32 with the directions from CPU11.

[0042] The disk read station 40 is equipped with the disk drive 41 which reproduces the program recorded on CD-ROM44, data, etc., and the decoder 42 which decodes the program on which the error correction (ECC) sign is added and recorded, data, etc. and 32 K bytes of buffer 43 which memorizes the playback data from a disk drive 41 temporarily. That is, the disk read station 40 consists of components required in order to read a disk drive 41 and the disk of decoder 42 grade. Here, they are CD-DA and CD-ROM as disk formatting. Data, such as XA, can be supported now. In addition, a decoder 42 functions also as a part of sound control section 30.

[0043] As voice data currently recorded on the disk played with a disk drive 41, there is the so-called PCM data which carried out analog-to-digital conversion of the sound signal other than above-mentioned ADPCM data (ADPCM data of CD-ROM XA etc.). As ADPCM data, the voice data currently recorded by expressing the difference of 16-bit digital data with 4 bits is supplied to SPU31, after an error correction and a decryption are made by the decoder 42, and after processing of a digital to analog etc. is performed by SPU31, since a loudspeaker 33 is driven, it is used. Moreover, as PCM data, after being decrypted by the decoder 42, since a loudspeaker 33 is driven, the voice data currently recorded as 16-bit digital data is used. In addition, the audio output of a decoder 42 once goes into SPU31, is mixed with this SPU output, and turns into the last audio output via liver gnat knitting.

[0044] The communications control section 50 is equipped with the communications control device 51 which controls a communication link between CPUs 1 through Maine Bath B, the controller 52 as an actuation input means to have two or more operating members (for example, push button switch) operated by the player of a game, and the memory card (secondary memory data medium) 53 constituted by the subject in the rewritable semiconductor device in which storage maintenance is possible. From a controller 52, the signal which shows the actuation condition of an operating member is outputted a fixed period (for example, per second 60 times), and the output signal is transmitted to CPU11 through the communications control device 51. In addition, although drawing 1 showed only the controller 52 and memory card 53 of a lot, two or more connection ports are established in the communications control device 51. Installation and removal of a controller 52 and a memory card 53 are possible to each of each port.

[0045] Furthermore, the game system 1 has the parallel I/O (input/output) port 61 for connecting a peripheral device, and serial I/O Port 62. It is also possible to advance a game, being able to connect other game systems 1 to serial I/O Port 62 through a non-illustrated telecommunication cable, and communicating between two game systems 1 and 1 by the connection.

[0046] Drawing 2 and drawing 3 show the example of the controller with which it can equip to the communications control device 51. Drawing 2 shows the general-purpose controller shared in various kinds of games, (a) is a plan and (b) is front view. On the other hand, drawing 3 is the plan of the controller of the exclusive mold constituted according to the game performed by the game system of this operation gestalt. In the following explanation, it writes for the controller of drawing 2 exclusive controller 52B [general-purpose controller 52A and the controller of drawing 3], and when it is not necessary to distinguish both, it is written as a controller 52.

[0047] As shown in drawing 2, general-purpose controller 52A has main part 52a in which a stock is possible. Every four push button switches PB1-PB8 are formed in right and left of the upper surface of main part 52a, respectively. The left-hand side push button switches PB1-PB4 function as the so-called direction directions key which shows the direction of four directions, respectively. In addition, although the push button switches PB1-PB4 are carrying out mutually-independent in drawing 2, it replaces with this and an operational single actuation switch may be used in the direction of arbitration. The right-hand side push button switches PB5-PB8 are used for various kinds of command input, selection, decision, cancellation actuation, etc. Moreover, every two push button switches PB9-PB12 are formed in right and left of the front face of main part 52a, respectively. In order to distinguish each push button switch visually, a suitable indicator is formed in the push button switch PB [PB5-] 12 tops or those perimeters. In the example of illustration, the mark of O, **, **, and x is displayed on the push button switches PB5-PB8, respectively. A numeric character 1 is displayed on the push button switch PB9 and 11, a numeric character 2 is displayed on the push button switch PB10 and 12, respectively, the alphabetic character L is displayed above the push button switch PB9, and the alphabetic character R is displayed above the push button switch PB11, respectively. thereby -- a switch PB8 is grasped [a switch PB5 / x carbon button and a switch PB7] for ** carbon button and a switch PB6 as O carbon button, 9Lswitch PB1 carbon button, 10Lswitch PB2 carbon button, 11Rswitch PB1 carbon button, and 12Rswitch PB2 carbon button to a player to ** carbon button, respectively. Furthermore, the push button switches PB13 and PB14 are formed in the center of the upper surface of main part 52a. In the push button switch PB13, a select button and the push button switch PB14 function as a start button. In addition, although omitted in drawing 2, the input unit of the stick type which outputs the analog signal according to the actuation direction and a control input may be added to general-purpose controller 52A. The vibrator which excites main part 52a may be built in.

[0048] On the other hand, as shown in drawing 3, exclusive controller 52B has main part 52b which carried out trapezoidal shape. Main part 52b is formed in the magnitude on condition of the use in a table. Nine circular push button switches PB21-PB29 divide into vertical 2 train, arrange in the upper surface of main part 52b, and are formed in it. The small push button switch 30 and PB 31 is formed above the push button switches PB21-PB29. These push button switch 30 and PB 31 functions as a select button and a start button, respectively like the push button switches PB13 and PB14 of general-purpose controller 52A mentioned above. The push button switches PB21-PB29 are colored any 1 color among five colors, respectively. for example, the switches PB21 and PB29 of lower train both ends -- white -- the switches PB23 and PB27 of those insides -- the switch 22 and PB 28 of upper train both ends is colored pink, and the inside switches PB24 and PB26 are colored light green for the switch PB25 of the center of a lower train light blue at yellow, respectively.

[0049] Although exclusive controller 52B outputs the signal for specifying the on-off condition of the push button switches 21-PB 31 in the condition of having connected with the communications control device 51 a fixed period, the distinction signal for combining with it and distinguishing exclusive controller 52B from general-purpose controller 52A is also outputted a fixed period. A distinction signal is a signal corresponding to the specific actuation condition of general-purpose controller 52A. For example, the signal equivalent to the output signal when carrying out depression actuation (ON) of the switches PB2, PB3, and PB4 to coincidence among the direction directions keys of general-purpose controller 52A is outputted as a distinction signal. The actuation condition to which a distinction signal is made to correspond does not have a possibility of being operated by coincidence in a game, or there may be, or you may choose it freely out of a very rare combination.

[0050] Various kinds of data required for the program and its activation of a game is written in CD-ROM44. If predetermined initialization actuation, for example, actuation of a non-illustrated electric power switch or a reset switch, is performed, CPU11 performs predetermined initialization processing according to the program of ROM14, after that, will read into main memory 13 the program and data which were recorded on CD-ROM44, and will start processing of a proper in a game. The outline of the game performed judges the actuation and it displays on a monitor 25 while it makes the sound effect according to the actuation output to BGM from a loudspeaker 33 in piles, when directions are taken out to a player through a monitor 25 so that the manual operation button on a controller 52 may be operated in the procedure according to the BGM, and a player operates a controller 52 to the directions, reproducing predetermined BGM from a loudspeaker 33. The details of a game are mentioned later.

[0051] Drawing 4 shows the fundamental game screen displayed on the screen of a monitor 25. The gage 101 for [of the game screen 100] directing the actuation timing of the manual operation button on a controller 52 to a player in the center is displayed mostly. The game is constituted from the premise played using nine manual operation buttons by this operation gestalt. Therefore, a gage 101 is logically classified into nine trucks 102a-102i which extend in the vertical direction. The timing mark 103--103 to show the actuation timing of the manual operation button corresponding to each is displayed on each trucks 102a-102i. In addition, the fictitious outline which divides the trucks 102a-102i of drawing 4 is not displayed on an actual screen. Moreover, this may be omitted although one Rhine 104--104 of the vertical direction is displayed at a time on

each truck 102 in drawing 4 .

[0052] Drawing 5 shows an example of the correspondence relation between each trucks 102a-102i and the push button switch on a controller 52. In drawing 5 , manual operation button A-I is defined on a game as the section for actuation assigned on a controller 52 corresponding to the trucks 102a-102i of drawing 4 , respectively. Since it may be used for the case where it is used independently, and 2 coincidence, about a general-purpose controller, "1P&2P" has shown the case where the case where it is used independently is used for "1P" and 2 coincidence. Incidentally, it means, respectively that "2P" is an object for the second person's players about "1P" being an object for the first person's players.

[0053] When using two general-purpose controller 52A so that clearly from drawing 5 , five left-hand side trucks 102a-102e are matched with controller 52A by the side of 1P from truck 102e of the center in a gage 101 among nine trucks 102a-102i in a gage 101, and five right-hand side trucks 102e-102i are matched with controller 52A by the side of 2P, respectively. That is, when playing using two general-purpose controller 52A, it will carry out by two players sharing the actuation corresponding to the directions in truck 102a - 102i. In addition, the correspondence relation about general-purpose controller 52A is an example to the last, and two or more setup is prepared besides illustration. The data which defined those setup is beforehand memorized by CD-ROM44, and a setup according to liking and play environment of a player is read into main memory 13.

[0054] Since the number of Trucks 102a-102i and the number of the push button switches PB21-PB29 are equal on the other hand in exclusive controller 52B, Truck 102a at the left end of a screen corresponds to the push button switch PB21 at the left end of [lower train] controller 52B. 2nd truck 102b corresponds to the push button switch PB22 at the left end of an upper train from the left, and Trucks 102c-102i are hereafter matched with the push button switches PB23-PB29 according to those order of a list similarly. And in order to clarify correspondence relation between the push button switches PB21-PB29 and Trucks 102a-102i, the portion expressed in the same color as the push button switches PB21-PB29 with which each corresponds is prepared in Trucks 102a-102i. For example, it is expressed in the same color as the push button switches 21-PB 29 with which a part of timing mark [at least] 103 displayed each Rhine 104 in a gage 101 and on it corresponds.

[0055] If a game is started, a timing mark 103 will move caudad gradually in the inside of truck 102a - 102i according to control of CPU11. And when a timing mark 103 arrives at the lower limit of Trucks 102a-102i, the actuation timing of the manual operation button corresponding to the trucks 102a-102i comes. If a player depresses and operates the push button switch with which it corresponds on a controller 52 according to this actuation timing, CPU11 will judge the quality of actuation based on the gap with the actuation timing directed by the timing mark 103, and the timing to which actuation was actually performed, and will display that judgment result on the judgment display 105--105 arranged in the lower limit of Trucks 102a-102i. The judgment display 105 imagines an elliptical manual operation button, and is put in order by vertical 2 train like the push button switches PB21-PB29 of exclusive controller 52B. And according to a judgment result, alphabetic characters, such as "COOL", "YES", and "WACK", are displayed on each judgment display 105. In addition, a judgment result may be displayed on the interior of a gage 101.

[0056] The score display 106 which displays the score (the example of illustration 1234 points) of a game is formed in the lower left of Screen 100. This score is a value calculated based on the judgment result for every actuation timing mentioned above. The title display 107 which displays the title of the contents of a stage or BGM is formed in the lower right of Screen 100. The character displays 108L and 108R are formed in the both sides of a gage 101, respectively. The animation of a game character etc. is displayed on these displays 108L and 108R. The character displayed changes according to BGM and the contents of animation change according to the judgment result for every actuation timing.

[0057] Drawing 6 and drawing 7 show the configuration of the data especially prepared in relation to playback of BGM, or the display control of a gage 101 among the data recorded on CD-ROM44. In this game system 1, two or more music is beforehand prepared as BGM used for a game, the data shown in drawing 6 (a) for every music of those is created, and it is recorded on CD-ROM44. The data of Music X contains a data point, wave table data, and performance data. A data point is data which defined the wave for reproducing Music X, and sound effect data is data which defined the sound generated when a controller 52 is operated in a game. These data is created as for example, PCM data or ADPCM data, and is recorded. Sound effect data was included in the data for every music for generating a suitable sound effect according to the class of BGM. Information required in order that wave table data may take out desired BGM and the data of a sound effect out of the data point mentioned above is described.

[0058] As shown in drawing 6 (b), performance data contains actuation timing data, automatic performance timing data, quota wave number data, and the II Tempo data. Actuation timing data is data which matched and specified the actuation timing of the operating member matched with Trucks 102a-102i, respectively as elapsed time from performance initiation of Music X. If it puts in another way, actuation timing data will be data which set up beforehand at which time of day under playback of Music X the push button switch of a controller 52 etc. should have been operated about each of Trucks 102a-102i. This actuation timing data serves as a base of the judgment to the display of a gage 101, or actuation of a controller 52.

[0059] Drawing 7 shows some actuation timing data in [each / of manual operation button A-I] timing diagram. The location of ON in drawing is equivalent to the timing which should operate manual operation button A-I, respectively. In actuation timing data, each actuation timing is specified at the progress time of day from the head of Music X according to the time-axis (equivalent to the horizontal axis in drawing) on the basis of the head of BGM. The music X as BGM consists of two or more phrases, and the break time of day t1 and t2 for every phrases of these and t3 -- are matched with the number of a phrase, and are recorded in actuation timing data. A phrase number is the serial number which sets the first phrase to 1 and is attached in order of the performance of a phrase.

[0060] The automatic performance timing data of drawing 6 (b) is prepared in order to generate a sound effect, even if there is no actuation of a controller 52. That is, automatic performance timing data is data which specified the timing which it is regarded [timing] as that by which manual operation button A-I was operated, and generates a sound effect at the progress time of day from the head of Music X. In addition, this automatic performance data is not necessarily required for activation of a game, and can be omitted.

[0061] Quota wave number data is data which specifies the relation between actuation of a controller 52 and a sound effect. Through the whole music X, regularity is sufficient as this relation and it may be changed to every suitable break (for example, phrase of Music X). Drawing 8 shows an example of the quota wave number data in the case of changing a sound effect for every phrase. By this data, each of manual operation button A-I and the sound effect which should make it generate for every phrase are matched. For example, if manual operation button A is observed, in the phrase 1, a sound effect 11 is assigned in a phrase 2, and the sound effect 1 is assigned for the sound effect 1 by the phrase 3, respectively. **** [actuation of the push button switch on the controller 52 defined as manual operation button A (for example, push button switch PB21 of exclusive controller 52B) / put / a sound effect 1 / therefore, / in a phrase 2 / in phrases 1 and 3 / on BGM / a sound effect 11]

[0062] The II Tempo data of drawing 6 (b) is data in which II Tempo of a performance of Music X is shown. When II Tempo changes in the middle of Music X, it matches with time amount from performance initiation, and II Tempo is recorded. With reference to this II Tempo data, the display rectangle of a gage 101 is controlled by this game system 1.

[0063] Drawing 9 shows the relation between the reading range of the actuation timing data under play of a game, and the display rectangle of a gage 101. The buffer area for a read ahead about actuation timing data is set to main memory 13 during the play of a game, and the actuation timing data from the current time tx when being based on a performance initiation time to time of day ty is read into the field. The actuation timing data of the range from current time tx to time of day tn (<ty) is further read into the buffer area for a display of main memory 13 among the data read into this read-ahead buffer area. Although the time amount from time of day tx to time of day tn is set up equally to two vibrant tunes of Music X, the time length changes according to performance II Tempo of Music X. Therefore, CPU11 determines the time of day tn after 2 vibrant tunes from current time tx with reference to the II Tempo data, and reads the actuation timing data to tn into the buffer area for a display from time of day tx as a display rectangle of a gage 101. CPU11 follows the actuation timing data read into the buffer area for a display, calculates arrangement of the timing mark 103 in a gage 101, and creates the image data for displaying a gage 101 based on the result of an operation. When the graphic control section 20 updates the game screen 100 based on this image data, the gage 101 suitable for current time tx is displayed in the game screen 100. In addition, the time of day ty of read-ahead ***** may also be changed according to II Tempo of Music X. Not only an equivalent for two vibrant tunes but you may change variously the amount of readings to the buffer area for a display.

[0064] Drawing 10 is a flow chart which shows the main routine of the game processing which CPU11 performs according to the program recorded on CD-ROM44. In this processing, first, a predetermined start screen is displayed on the screen of a monitor 25 (step S1), and it distinguishes whether the start button of a controller 52 was operated continuously (step S2). A start screen is constituted like Screen 200 shown in drawing 11.

[0065] If a start button is operated where Screen 200 of drawing 11 is displayed, CPU11 will progress to step S3 of drawing 10, and will perform game start processing. The details are mentioned later. In addition, when there is no fixed time amount actuation in the phase of step S2, you may shift to the mode which displays a demonstration screen.

[0066] After processing of step S3 displays a mode selection screen on the screen of a monitor 25 (step S4). A mode selection screen is constituted like Screen 210 of drawing 12. Four, "START GAME", "FREE", "TRAINING", and "OPTION", are displayed on this screen 210 as alternative of a player. A player's selection of four to any these one mode performs processing according to the mode (either the step S5 -> step S6 - S9).

[0067] That is, when "START GAME" is chosen, game mode processing is performed (step S6). In this mode, if one music (BGM) is cleared, a game will be advanced in the procedure of progressing to the following music. When "FREE" is chosen, free mode processing is performed (step S7). In this mode, a player can play favorite music. When "TRAINING" is chosen, training mode processing is performed (step S8). In this mode, a player can practice by setting a practice range as desired music. When "OPTION" is chosen, option setting processing is performed (step S9). In this mode, a player can perform a setup according to self liking about how to advance a game etc.

[0068] In option mode, Screen 220 shown in drawing 13 is displayed on a monitor 25. "GAME OPTION", "KEY CONFIG", "SOUND TEST", "RECORDS", "MEMORY CARD", and "OPTION RESET" are prepared for Screen 220 as a selectable setting item. When "KEY CONFIG" is chosen, a setting change of the correspondence relation between the switches PB1-PB12 of general-purpose controller 52A and the trucks 102a-102i of a gage 101 is made. When "SOUND TEST" is chosen, BGM can be chosen and it can reproduce. When "RECORDS" is chosen, record of the past game can be referred to. When "MEMORY CARD" is chosen, the save and loading of data (for example, setting condition of the past play career or various option items) over a memory card 53 can be performed. When "OPTION RESET" is chosen, each setting item can be returned to an initial state. When "GAME OPTION" is chosen, Screen 230 of drawing 14 is displayed further.

[0069] "GAME LEVEL", "SOUND MODE", "BGM VOLUME", "SE VOLUME", "CONTROLLER 1P", "CONTROLLER 2P", "VIBRATION", and "BUTTON MODE" are prepared for Screen 230 as a selectable setting item. When "GAMELEVEL" is chosen, the difficulty of a game can be chosen from several steps. When "SOUND MODE" is chosen, a monophonic recording or a stereo can be chosen about the playback mode of BGM. When "BGM VOLUME" or "SE

VOLUME" is chosen, BGM or the playback sound volume of a sound effect can be chosen. When "CONTROLLER 1P" or "CONTROLLER 2P" are chosen, as a controller 52 for the object for 1P, or 2P, it can set up any shall be used between general-purpose controller 52A or exclusive controller 52B. When "VIBRATION" is chosen, the excitation mode by the vibrator can be chosen only within the case where vibrator is built in the controller 52. Four, "MISS" excited when actuation of "BEAT SYNC" which excites controller 52A as excitation mode according to the rhythm of BGM, "BUTTON" which answers actuation of a controller 52 and is excited, and a player is judged to be failure actuation in which predetermined tolerance is not arrived at, and "NO USE" which forbids excitation, are prepared.

[0070] When "BUTTON MODE" is chosen, either 5 carbon-button mode (the 2nd mode) in which the number of the manual operation buttons used in a game is restricted to five pieces, or 9 carbon-button mode (the 1st mode) which uses all of nine manual operation buttons can be chosen. When 5 carbon-button mode is chosen, the actuation corresponding to every two trucks 102a, 102b, 102h, and 102i becomes unnecessary from the both ends of a gage 101. The player which the difficulty of a game falls and is not used to a game by this is also provided with comfortable play environment. In addition, 7 carbon-button mode in which the number of a manual operation button was restricted to seven pieces as the mode which reduced the number of manual operation buttons besides 5 carbon-button mode, having used actuation corresponding to every one trucks 102a and 102i as unnecessary from the both ends of a gage 101 etc. may be formed. All the setting items in the option processing explained above are recorded on main memory 13 as play conditions. And according to directions of a player, it is saved also at a memory card 53. In addition, the 1st mode is chosen in the default setting at the time of performing predetermined initialization actuation to the game system 1.

[0071] After processing of either step S6 of drawing 10 - step S9 finishes, CPU11 returns processing to step S4 of drawing 10, displays Screen 210 of drawing 12 on a monitor 25, and waits for the next processing by the player.

[0072] Drawing 15 is a flow chart which shows the details of the game start processing performed at step S3 of drawing 10. This processing is prepared so that the play environment with an unfamiliar suitable player for a game can be set up. CPU11 distinguishes [which starts game start processing] whether it is not rich, the signal from the communications control device 51 is read, and exclusive controller 52B is connected (step S11). When not connecting, it distinguishes whether general-purpose controller 52A is connected to both by the side of 1P and 2P to the communications control device 51. Arbitrarily, the method of the connection confirm of exclusive controller 52B prepares a circuit special to the exclusive controller 52B side, and when there is a demand signal from CPU11, what answers a letter in a specific signal is mentioned by it. And when negative judgment is carried out (i.e., when the controller 52 is connected only to the 1P side), it progresses to step S13, and it distinguishes whether the career played in 9 carbon-button mode to the memory card 53 is recorded. When career is not recorded (it contains also when data cannot be read), it checks whether Screen 300 of drawing 16 is displayed on a monitor 25, and it plays in 5 carbon-button mode (step S14), and it waits for selection of a player continuously (step S15). If a player chooses by operating a controller 52, it will distinguish whether 5 carbon-button mode was chosen (step S16). And when 5 carbon-button mode is chosen, the play by 5 carbon-button mode is turned on (step S17), otherwise, the play by 5 carbon-button mode is turned off (step S18). Then, it returns to processing of drawing 10. In addition, what is necessary is to make it choose it as a player whether it plays in which the mode at step S16, and just to turn ON the mode according to the selection result, when ***** for example, of 7 carbon-button mode is made possible by option setting processing (step S9) of drawing 10 besides 5 carbon-button mode and 9 carbon-button mode.

[0073] When it is judged that exclusive controller 52B is connected at step S11, it checks to a player whether Screen 310 of drawing 17 is displayed on a monitor 25, and it plays by the exclusive controller (step S21), and it waits for selection of a player (step S22). If a player chooses by operating a controller 52, it will distinguish whether use of an exclusive controller was chosen (step S23). When affirmative judgment of step S23 is carried out, it registers into main memory 13 that exclusive controller 52B is used about the side (1P or 2P) to which exclusive controller 52B was connected as information about a controller (step S24). This registration processing is equal to the processing performed when exclusive controller 52B is chosen by "CONTROLLER 1P" or "CONTROLLER 2P" in Screen 230 of drawing 14.

[0074] After registering use of exclusive controller 52B at step S24, when negative judgment is carried out at step S23, it progresses to step S25, and distinguishes whether the controller 52 is connected only to the 1P side of the communications control device 51. If it is only 1P, it will progress to step S13, otherwise, game start processing is finished, and it returns to processing of drawing 10.

[0075] When it is judged that general-purpose controller 52A is connected to both 1P and 2P at step S12, Screen 320 of drawing 18 is displayed on a monitor 25. It checks to a player whether "recommended setting for a two-person play" is used about the correspondence relation between the push button switches PB1-PB12 on general-purpose controller 52A, and manual operation button A-I on a game (step S31), and waits for selection of a player (step S32). If a player chooses by operating a controller 52, it will judge whether it consented to use of "recommended setting for a two-person play" (step S33). And when it consents, the correspondence relation between the push button switches PB1-PB12 on general-purpose controller 52A of 1P and 2P and manual operation button A-I on a game is set as the condition of having been beforehand set as default setting for a two-person play (step S34). When negative judgment is carried out after termination of step S34, or at step S33, game start processing is finished, and it returns to processing of drawing 10.

[0076] Drawing 19 is the flow chart which showed the procedure of the game processing which CPU11 performs about the play of one music BGM, when game mode or the free mode is chosen in drawing 10. When starting the play about one music, CPU11 reads the play conditions first recorded on main memory 13, distinguishes the contents (step S51), and it loads data

(for example, actuation timing data etc.) required for a play to main memory 13 from CD-ROM44 continuously (step S52). Then, current carbon button mode is checked (step S53), and 5 carbon-button mode judges whether it is ON (step S54). Processing required in order to treat the actuation timing data about manual operation buttons A, B, H, and I as automatic performance data is performed at the time of ON (step S55). For example, the actuation timing defined as the timing of an automatic performance of the automatic performance data currently beforehand created about manual operation buttons A, B, H, and I by actuation timing data is added.

[0077] Then, the display of guidance of processing required for game initiation, for example, a game start, etc. is performed (step S56), it points so that the data point of BGM may be passed to the sound control section 30 from the disk read station 40 following it, and that playback is made to start (step S57). Subsequently, the time check for specifying the elapsed time from performance initiation is started (step S58).

[0078] At continuing step S59, current time is detected and it judges whether the time of day corresponds to the automatic performance timing about either of manual operation button A-I (step S60). If it is automatic performance timing, the sound effect corresponding to the manual operation button A-I will be generated (step S61). If 5 carbon-button mode is turned on at this time, the sound effect which is not generated by processing of step S55 unless it originally operates manual operation buttons A, B, H, or I will be generated automatically.

[0079] When it is judged after processing of step S61, or at step S60 that it is not automatic performance timing, the data (for example, coordinate of a timing mark 103) for displaying the gage 101 corresponding to current time on a monitor 25 is created based on actuation timing data (step S62), and the display of a gage 101 is updated based on the data (step S63). When 5 carbon-button mode is ON, processing of dropping the lightness of the trucks 102a, 102b, 102h, and 102i corresponding to manual operation buttons A, B, H, and I, as shown in drawing 22 is added, and a player is made to recognize that actuation of the push button switch corresponding to these trucks is unnecessary here. However, based on actuation timing data, a timing mark 103 is displayed also about these trucks 102a, 102b, 102h, and 102i.

[0080] After renewal of the display of a gage 101 distinguishes whether the play progressed or not based on current time to the performance termination location of BGM at step S64, and when it is not a termination location, it returns to step S59. If it is a practice termination location, a predetermined post process will be performed (step S65), and processing of one music will be finished.

[0081] Drawing 20 is a flow chart which shows the actuation judging processing which CPU11 performs in parallel to while processing of step S59 - step S64 is repeated in processing of drawing 19. In this processing, it distinguishes whether the player operated one of manual operation button A-I first (step S81), and if there is actuation, that actuation time of day will be detected (step S82). Then, the sound effect currently assigned to the operated carbon button is generated from a loudspeaker 33 (step S83).

[0082] At the following step S84, the time gap with the actuation timing (however, it restricts to the actuation timing about the actually operated manual operation button) nearest to current time is detected among the actuation timing specified as the actuation time of day detected at step S82 by actuation timing data. And based on the detected gap, the quality of actuation is divided into several steps and judged (step S85). At continuing step S86, the alphabetic character according to a judgment result etc. is displayed on the judgment display 105 following it as the truck 102 corresponding to the carbon button with which actuation of Screen 100 was performed (refer to drawing 4 and drawing 22).

[0083] At continuing step S87, the score from performance initiation to current is calculated according to the judgment result of step S85. For example, a standard position is established in a judgment result, and it adjusts so that it adds points at the time of a good judgment result, giving a demerit mark etc. carries out at the time of a judgment result inferior on the contrary, each actuation is superior to it, and a score may become high. And it distinguishes whether it is play termination at step S88, and when it judges that it has not ended yet and is judged as return and termination to step S81, actuation judging processing is finished. Although automatic performance data was created in drawing 19 and drawing 20 corresponding to 5 carbon-button mode, otherwise, the judgment routine of drawing 20 may be changed and you may correspond to 5 carbon-button mode. That is, about the actuation timing data corresponding to manual operation buttons A, B, H, and I, it may process as what omitted the judgment of steps S81 and S82, and was operated by the best actuation timing, and processing after step S83 may be performed.

[0084] Moreover, if a select button is depressed and operated as the player is playing by general-purpose controller 52A, CPU11 will interrupt and perform processing of drawing 21. This processing is for changing whether the information for making the judgment display 105 of the lower part of a gage 101 identify the assignment of the push button switches PB1-PB12 to each trucks 102a-102i is displayed, as shown in drawing 22 and drawing 23. In addition, manual operation buttons PB9-PB12 are expressed by drawing 22 and the example of a screen of drawing 23 L1, L2, R1, and R2, respectively by mark ** by which manual operation buttons PB5-PB8 were given for manual operation buttons PB1-PB4 to them by the arrow head of the direction of four directions, x, **, and O. An example when playing drawing 22 in 5 carbon-button mode, and drawing 23 show the example when playing in 9 carbon-button mode, respectively. However, any example is a thing when controller 52A is connected only to 1P.

[0085] If processing of drawing 21 is started, CPU11 will distinguish whether the select button of the controller 52 by the side of 1P was first pushed at step S101. When it is judged as the 1P side, it progresses to step S102, and it distinguishes in the no as which assignment of a manual operation button is displayed about controller 52A by the side of current and 1P. If not displayed, assignment of manual operation button A-I on the game to manual operation buttons PB1-PB12 is distinguished

from the play conditions recorded on main memory 13 (step S103), and the information for making a judgment display identify assignment of each push button switches PB1-PB12 based on the distinction result is displayed (step S104). On the other hand, when it is judged as under a current display at step S102, the display is stopped at step S105.

[0086] When it judges that it is not actuation by the side of 1P at step S101, the same processing as the above is performed about the push button switches PB1-PB12 of controller 52A by the side of 2P (steps S106-S109). And interruption processing is ended with activation of steps S104, S105, S108, or S109.

[0087] With the above operation gestalt, when step S3 is performed immediately after starting the main routine of drawing 10, and when "CONTROLLER 1P" or "CONTROLLER 2P" are chosen by option setting processing of step S9, it becomes selectable any shall be used as a controller 52 between general-purpose controller 52A or exclusive controller 52B. Therefore, unless it performs option setting processing or initialization actuation of a game is performed, a game system cannot be made to recognize the change to general-purpose controller 52A and exclusive controller 52B, after a main routine is once started and processing of step S3 is performed. However, general-purpose controller 52A and exclusive controller 52B may be substituted to the communications control device 51 also in the middle of the play of a game in fact.

[0088] In such a case, what is necessary is to judge that the controller 52 was substituted and just to perform processing of drawing 24, when change of the distinction signal outputted from exclusive controller 52B is periodically supervised by CPU11 and it changes (i.e., when a distinction signal is newly detected or the distinction signal detected till then stops), in order to have made registration of a controller 52 change automatically. In this processing, when it is judged that it distinguished and exclusive controller 52B was connected whether exclusive controller 52B was newly first connected at step S121, assignment of manual operation button A-I to a controller 52 is changed into a setup for exclusive controllers (step S122). On the other hand, when it is judged that general-purpose controller 52A was connected at step S121, assignment of manual operation button A-I to a controller 52 is changed into the default setting for general-purpose controllers (step S123). Default setting is set up as shown in drawing 5. Or in step S123, you may return to a setup before memorizing. In addition, when it constitutes so that a setup of a controller can be switched automatically as mentioned above, the setting item of a controller may be omitted in option setting processing.

[0089] Drawing 25 is the example which added the subdisplay 70 to the communications control section 50. The subdisplay 70 is equipped with the drive circuit which controls LCD (liquid crystal display) and its display, for example, is attached on general-purpose controller 52A. According to control of CPU11, Screen 400 of drawing 26 (a) is displayed on such a subdisplay 70. Nine Rhine 401a-401i which symbolizes the trucks 102a-102i of the gage 101 mentioned above, and the quota displays 402a-402i of the approximate circle form which symbolizes the judgment display 105 are formed in Screen 400. And images, such as a mark which shows the push button switches PB1-PB12 on general-purpose controller 52A matched with each trucks 102a-102i, an alphabetic character, and a numeric character, are displayed on the inside of quota display 402a - 402i, or its near. Thereby, the correspondence relation between Trucks 102a-102i and the push button switches PB1-PB12 can be checked now on controller 52A. Preferably, when the push button switches PB1-PB12 are operated, it is good to give change to the display of the quota displays 402a-402i corresponding to the push button switches PB1-PB12. Drawing 26 (b) shows the condition of having assigned corresponding to actuation of the push button switch PB3 (referring to drawing 2), and having changed the gradation of display 402c. Since the subindicating equipment 70 of dedication will be formed to each controller 52A when two or more connection of the general-purpose controller 52A is made, the quota condition of manual operation button A-I to each controller 52A can be displayed on each subindicating equipment 70.

[0090] Although the above operation gestalt explained the case where this invention was applied to the game which consisted of premises which use nine manual operation buttons, naturally this invention is applicable also to the other game system. For example, the number of a manual operation button is good by the number not only of nine pieces but arbitration. a manual operation button -- adding -- rotation -- an operational table etc. may be prepared as an operating member.

[0091] At the above operation gestalt, it functions by combination with the software of specification [CPU11] as an operator-guidance means, a mode-selection means, an operator-guidance limit means, an evaluation means, an evaluation information means, a music playback directions means, a sound effect output directions means, a sound effect auto-output directions means, a mode check means check control means, a quota information presentation means, an information-display selection means, a quota information-display control means, a quota modification means, and a renewal means of data. However, a part of these means [at least] may be replaced by the logical circuit using LSI etc.

[0092]

[Effect of the Invention] As explained above, according to this invention, according to the directions from a player, it can write whether a game is performed on a game using all the sections for actuation of a predetermined number by which use is planned, or a game is performed using the section for actuation fewer than it as it is selectable, and the suitable operating environment which balanced each level to the various players with which level differs can be offered.

[0093] Moreover, to a player, the information for specifying the relation between two or more operating members prepared in the input unit and the section for actuation used on a game can be written as presentation is possible, even if there are many sections for actuation, the correspondence relation between directions of the actuation given through a display and the operating member on an input unit can be grasped clearly, and a comfortable operating environment can be offered to a player.

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TECHNICAL FIELD

[The technical field to which invention belongs] This invention relates to the game system constituted in order to enjoy actuation according to music etc.

[Translation done.]

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PRIOR ART

[Description of the Prior Art] In this kind of game system, it is assigned as the section for actuation which a part of two or more operating members [at least] prepared in the input unit of a game use in a game, and the actuation timing in the game about the section for these actuation is beforehand set up according to predetermined music. Initiation of a game gives directions to a player through a game screen so that predetermined music may be interlocked with and each section for actuation may be operated to the set-up timing. If a player operates an operating member to the directions, the accuracy of the actuation will be distinguished, play results will be determined based on the distinction result, and it will be reported to a player.

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EFFECT OF THE INVENTION

[Effect of the Invention] As explained above, according to this invention, according to the directions from a player, it can write whether a game is performed on a game using all the sections for actuation of a predetermined number by which use is planned, or a game is performed using the section for actuation fewer than it as it is selectable, and the suitable operating environment which balanced each level to the various players with which level differs can be offered.

[0093] Moreover, to a player, the information for specifying the relation between two or more operating members prepared in the input unit and the section for actuation used on a game can be written as presentation is possible, even if there are many sections for actuation, the correspondence relation between directions of the actuation given through a display and the operating member on an input unit can be grasped clearly, and a comfortable operating environment can be offered to a player.

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] In order for a correlation to be between the number of the sections for actuation, and the difficulty of a game and to be able to enjoy a game in the game system mentioned above for a long period of time, it is desirable the increase of a number and to carry out and to set [of the section for actuation] up difficulty more highly. When it is difficult for the player which is not used to a game on the other hand to operate it exactly, checking much sections for actuation with the directions in a screen and there are many sections for actuation, there is a possibility that the interest over a game may be spoiled on the contrary. Moreover, when there are many sections for actuation, it becomes difficult to grasp the correspondence relation between the directions in a screen and the operating member on an input unit, and derangement may be produced to the player which is not used to a game.

[0004] Then, in case this invention performs the game which makes the operating member of an input unit operate it according to a musical rhythm etc., it aims at offering the game system which can set up the suitable operating environment which balanced the level to the player.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

- [Drawing 1] The block diagram of the game system in 1 operation gestalt of this invention.
- [Drawing 2] Drawing showing an example of the general-purpose controller used by the game system of drawing 1.
- [Drawing 3] Drawing showing an example of the exclusive controller used by the game system of drawing 1.
- [Drawing 4] Drawing showing the Main screen of the game performed by the game system of drawing 1.
- [Drawing 5] Drawing showing the correspondence relation between the manual operation button used in the game of drawing 4, and the actual push button switch on a controller.
- [Drawing 6] Drawing showing the configuration of the data of the music X recorded on CD-ROM of drawing 1.
- [Drawing 7] Drawing having shown some actuation timing data of drawing 6 (b) in timing diagram.
- [Drawing 8] Drawing having shown the correspondence relation between the manual operation button of drawing 7, and the sound effect outputted to the actuation.
- [Drawing 9] Drawing showing signs that the actuation timing data of drawing 6 is read into main memory.
- [Drawing 10] The flow chart which shows the main routine of the game processing performed in CPU of drawing 1.
- [Drawing 11] Drawing showing the start screen displayed immediately after starting game processing of drawing 10.
- [Drawing 12] Drawing showing the mode selection screen displayed in processing of drawing 10.
- [Drawing 13] Drawing showing the screen displayed when the item of "OPTION" is chosen on the mode selection screen of drawing 12.
- [Drawing 14] Drawing showing the screen displayed when the item of "GAME OPTION" is further chosen on the screen of drawing 13.
- [Drawing 15] The flow chart of the game start processing performed as a subroutine of game processing of drawing 10.
- [Drawing 16] Drawing showing the screen displayed in case use in 5 carbon-button mode is checked by processing of drawing 15.
- [Drawing 17] Drawing showing the screen displayed in case use of an exclusive controller is checked by processing of drawing 15.
- [Drawing 18] Drawing showing the screen displayed in case use of "two-person play recommended setting" is checked by processing of drawing 15.
- [Drawing 19] The flow chart of the game processing performed in case one music BGM is played when game mode and the free mode are chosen by processing of drawing 10.
- [Drawing 20] The flow chart which shows the procedure of the actuation judging processing which CPU performs in parallel to while BGM is reproduced from processing of drawing 19.
- [Drawing 21] The flow chart of carbon button quota display processing interrupted and performed when a player operates the select button of a controller while processing of drawing 19 having been performed.
- [Drawing 22] Drawing showing an example of a game screen in case processing of drawing 19 is performed in the state of ON of 5 carbon-button mode.
- [Drawing 23] Drawing showing an example of a game screen in case processing of drawing 19 is performed in the state of OFF of 5 carbon-button mode.
- [Drawing 24] The flow chart of the controller update process performed when connection of a controller is changed in the middle of a game.
- [Drawing 25] Drawing showing the example which added the subdisplay to the communications control section to the block diagram of drawing 1.
- [Drawing 26] Drawing showing an example of the image displayed on the screen of the subdisplay of drawing 25.
- [Description of Notations]
- 1 Game System
 - 10 Main Control Section
 - 11 CPU (Game Control Unit)
 - 12 Peripheral Device
 - 13 Main Memory (Storage, Storage)
 - 20 Graphic Control Section (Display)

25 Monitor
30 Sound Control Section (Sound Output Unit)
33 Loudspeaker
40 Disk Read Station
41 Disk Drive
44 CD-ROM (Storage, Storage)
50 Communications Control Section
51 Communications Control Device
52 Controller (Input Unit)
52A General-purpose controller (input unit)
52B An exclusive controller (input unit)
53 Memory Card (Auxiliary Storage Unit)
100 Game Screen
101 Gage
102a-102i Truck
103 Timing Mark
104 Rhine
105 Judgment Display
106 Score Display
107 Title Display
108L, 108R Character display
PB1-PB14 Push button switch of a general-purpose controller
PB21-PB31 Push button switch of an exclusive controller

[Translation done.]

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MEANS

[Means for Solving the Problem] Hereafter, this invention is explained. In addition, although a reference mark of an accompanying drawing is written in addition in parenthesis writing in order to make an understanding of this invention easy, thereby, this invention is not limited to a gestalt of illustration.

[0006] Invention of claim 1 is equipped with a display (20) which displays a game screen, and two or more operating members (PB1-PB14, PB21-PB31) which receive actuation by player. An input unit which outputs a signal corresponding to an actuation condition of these operating members (52A, 52B), Storage which memorizes actuation timing data which defined actuation timing in a game about each of the section for actuation of a predetermined number assigned to said a part of two or more operating members [at least] (44 13), A game control unit (11) which performs a game according to a predetermined procedure on a screen of said display, referring to an output signal from said input unit and data recorded on said storage is provided. It is based on said game control unit during activation of said game at said actuation timing data. An operator guidance means to display an image (101) it is directed that operates each of the section for actuation of said predetermined number to timing defined with said actuation timing data on a screen of said display, The 1st mode in which the number of said sections for actuation used in said game is set as said predetermined number, A mode selection means to choose from said predetermined number either of the 2nd mode restricted to a small number according to directions from a player, When said game is performed in said 2nd mode, so that only actuation of a number smaller than said predetermined number of sections for actuation may be directed An operator guidance limit means to change said image which is displayed by said operator guidance means and to direct, An evaluation means to evaluate actuation of said input unit of said player performed to directions from said operator guidance means based on said actuation timing data, A technical problem mentioned above is solved by game system by which an evaluation information means to tell said player about information relevant to an evaluation result by said evaluation means was established.

[0007] If according to this invention the 2nd mode is chosen and a game is performed, it will decrease rather than a case where the number of the sections for actuation with which actuation is directed to a player through a screen of a display chooses the 1st mode, and performs a game. Therefore, it is not necessary to reduce difficulty in the 2nd mode relatively and to reduce difficulty in the 1st mode in a game in consideration of an unfamiliar player rather than the 1st mode. Thereby, a suitable operating environment doubled with level of a player can be offered.

[0008] Invention of claim 2 is set to a game system according to claim 1. Said operator guidance means As an image which directs actuation of the section for actuation of said predetermined number While displaying a gage (101) which has an index (103) to show actuation timing of the section for actuation corresponding to each of the section for actuation of said predetermined number which could classify into an parallel truck (102a-102i) mutually, and was matched with each truck So that said index may arrive at a predetermined location in said gage, when actuation timing of the section for actuation corresponding to each truck comes According to advance of said game, a display position of said index is gradually changed along said truck. Said operator guidance limit means It is characterized by adding the image effect of making a player recognizing actuation of the section for [said] the actuation corresponding to [as opposed to / mutually / some trucks (for example, 102a, 102b, 102h, 102i) among parallel trucks] the truck concerned being unnecessary. Therefore, in the 1st mode, all trucks will be used for directions of actuation and some trucks will be used for directions of actuation in the 2nd mode. Therefore, the number of trucks at which a player should gaze in the 2nd mode decreases, and, thereby, difficulty of a game falls.

[0009] Invention of claim 3 is characterized by said image effect being the processing to which lightness of some said trucks is reduced in a game system according to claim 2. Therefore, a player can be made to understand clearly that it is not necessary to pay a gaze about some trucks.

[0010] Invention of claim 4 is characterized by locating said some of trucks in an edge about a direction where said truck of said gage was put in order in a game system according to claim 3. Therefore, when a game is performed in the 2nd mode, a player should gaze only at a truck arranged among two or more trucks at a central site, and can grasp directions of actuation more easily.

[0011] While a sound output unit (30) which outputs a predetermined sound is formed in a game system according to claim 1, invention of claim 5 Music data and sound effect data for making a sound effect corresponding to actuation of predetermined music and said section for actuation output to said storage (44 13) from said sound output unit, respectively are recorded. A music playback directions means to make said game control unit (11) output said music based on said music data from said

sound output unit during activation of said game, A sound effect output directions means to which answer actuation of an operating member assigned as said section for actuation, and a predetermined sound effect based on said sound effect data is made to output from said sound output unit, When said game is performed in said 2nd mode, inside of the section for actuation of said predetermined number, In said 1st mode, actuation is directed by said operator guidance means. A sound effect auto-output directions means to which the section for actuation actuation is not instructed to be in said 2nd mode regards it as what was operated to timing specified with said actuation timing data, and makes a sound effect corresponding to the actuation output based on said sound effect data from said sound output unit, **** eclipse ***** -- it is characterized by things.

[0012] According to this invention, music is played according to advance of a game, and if an input unit is operated to compensate for directions given through a display, to compensate for that actuation, a sound effect will put on music. Therefore, sensation which performs a game rhythmically according to music can be given to a player, and pleasure of a game can be increased. And in the 2nd mode, since it is regarded as that by which the section for actuation to which directions of actuation are abbreviated was operated to predetermined actuation timing and a sound effect corresponding to the actuation piles up automatically, the same pleasure as the 1st mode can be given to a player.

[0013] Invention of claim 6 is set to a game system according to claim 1. Said mode selection means It has a mode check means to ask a player any shall be chosen between said 1st mode or said 2nd mode before a game is performed by the beginning after predetermined initialization actuation is performed to said game system. It is characterized by being based on directions of said player to an inquiry through the mode check means, and choosing one [a gap or] mode.

[0014] According to this invention, after initialization actuation to a game system, before a game is performed by the beginning, a player is asked about by any it shall play between the 1st mode or the 2nd mode with a mode check means. Therefore, an opportunity to choose the suitable mode for self to a player is given certainly.

[0015] In a game system according to claim 6, two or more connection of said input unit (52A, 52B) of invention of claim 7 is enabled to said game control unit (11). Said mode selection means is characterized by having a check control means which forbids said inquiry, when an inquiry of mode selection by said mode check means is permitted when it distinguishes whether two or more input units are connected and it is judged to be an unit, and it is judged to be plurality.

[0016] Since according to this invention one player will operate much sections for actuation when only a singular input unit is connected, before a game is started, an opportunity to choose either of the 1st mode and the 2nd mode can be given certainly, and a possibility that a player which is not used to a game may start a game in the 1st mode in which difficulty is carelessly high can be abolished. On the other hand, a possibility that difficulty of a game will fall relatively in order that two or more players may share and play the section for actuation of a predetermined number, when two or more input units are connected, and the 2nd mode will be chosen is small. Therefore, unless it assigns the 1st mode as default setting after initialization actuation, he is conscious especially before game initiation and a player chooses the 2nd mode, it is convenient to set up so that a game may be started in the 1st mode.

[0017] An auxiliary storage unit (53) with which invention of claim 8 can record information about play career of a player in a game system according to claim 6 is formed possible [connection] to said game control unit (11). Said mode selection means distinguishes whether after said predetermined initialization actuation is performed, information which shows career played in said 1st mode to said auxiliary storage unit before a game is performed by the beginning is recorded. When an inquiry of mode selection by said mode check means is permitted when it is judged that there is no play career in the 1st mode, and said play career judges it as plurality, it is characterized by having a check control means which forbids said inquiry.

[0018] When career which a player played in the 1st mode to an auxiliary storage unit is not being recorded according to this invention, selection in the mode is asked before starting a game first after initialization actuation. On the other hand, henceforth, after recording career played in the 1st mode, even if it performs initialization actuation, mode selection is not asked before game initiation. Therefore, while giving an opportunity of mode selection certainly before game initiation to a player without experience still played in the 1st mode, to a player with experience played in the 1st mode, time and effort according to a check of mode selection can be saved, and a game can be made to start immediately.

[0019] Invention of claim 9 is equipped with a display (20) which displays a game screen, and two or more operating members (PB1-PB14, PB21-PB31) which receive actuation by player. An input unit which outputs a signal corresponding to an actuation condition of these operating members (52A, 52B), Quota data which defined correspondence relation of said two or more operating members and section for actuation of a predetermined number used on a game, And storage which memorizes actuation timing data which defined actuation timing in a game about each of said section for actuation (44 13), A game control unit (11) which performs a game according to a predetermined procedure on a screen of said display, referring to an output signal from said input unit and data recorded on said storage is provided. It is based on said game control unit during activation of said game at said actuation timing data. An operator guidance means to display an image (101) it is directed that operates each of the section for actuation of said predetermined number to timing defined with said actuation timing data on a screen of said display, An evaluation means to evaluate actuation of said input unit of said player performed to directions from said operator guidance means based on data which defined said actuation timing, An evaluation information means to tell said player about information relevant to an evaluation result by said evaluation means, Based on said quota data, a technical problem mentioned above is solved by game system by which a quota information presentation means to show information for specifying relation between said two or more operating members and said section for actuation

to a player was established.

[0020] According to this invention, a player can grasp now easily correspondence relation between the section for actuation in which use is planned on a game, and an actual operating member prepared in an input unit by referring to information which a quota information presentation means presents. Therefore, a game can be comfortably enjoyed also with an unfamiliar player in a game, without getting confused on operating instructions.

[0021] It is characterized by displaying an indicator for invention of claim 10 distinguishing each of two or more of said operating members (PB1-PB12) to said input unit (52A) in a game system according to claim 9, and said quota information presentation means displaying an image which imitated said indicator as said information. Therefore, correspondence relation with a screen displayed on a screen of an indicator with which it was expressed by input unit, and a display etc. is clarified, and correspondence relation between the section for actuation and an actual operating member can be more easily grasped now.

[0022] Invention of claim 11 is characterized by said quota information presentation means displaying said information on a screen of said display in a game system according to claim 9 or 10. Therefore, assignment of an operating member can be checked easily, gazing at operator guidance displayed on a screen of a display.

[0023] A subdisplay (70) with which invention of claim 12 differs from said display on said input unit in a game system according to claim 9 or 10 is prepared, and said quota information presentation means is characterized by displaying said information on a screen of said display.

[0024] According to this invention, since correspondence relation between said section for actuation and an actual operating member can be grasped on a screen of a subdisplay of an input unit, it can carry out more quickly [a check correspondence-related / said] and easily.

[0025] While two or more connection of said input unit (52A, 52B) of invention of claim 13 is enabled to said game control unit (11) in a game system according to claim 9 or 10 A different subdisplay (70) from said display corresponding to each of an input unit of these plurality is prepared, and said quota information presentation means is characterized by displaying said information on a screen of said subdisplay. When dividing and assigning the section for actuation used in a game to two or more input units according to this invention, assignment of the section for actuation about an input unit matched with these secondary display can be displayed on a screen of each *****. Facilities can be given to grasp correspondence-related said] in case two or more displays are used thereby especially.

[0026] Invention of claim 14 is set to a game system according to claim 9 or 10. An information-display selection means to choose whether information for specifying relation with said section for actuation is displayed according to directions from a player, When presenting of said information is chosen with said information-display selection means, presenting of said information by said quota information presentation means is permitted. When a display halt of said information is chosen, it is characterized by preparing a quota information-display control means which forbids presenting of said information by said quota information presentation means, and ** in said game control unit (11).

[0027] According to this invention, according to liking of a player, it can choose whether information for specifying relation between said two or more operating members and said section for actuation is displayed.

[0028] Invention of claim 15 is set to a game system according to claim 9 or 10. Said operator guidance means As an image which directs actuation of the section for actuation of said predetermined number While displaying a gage (101) which has an index (103) to show actuation timing of the section for actuation corresponding to each of the section for actuation of said predetermined number which could classify into an parallel truck (102a-102i) mutually, and was matched with each truck So that said index may arrive at a predetermined location in said gage, when actuation timing of the section for actuation corresponding to each truck comes According to advance of a game, a display position of said index is gradually changed along said truck, and said quota information presentation means is characterized by displaying information for specifying relation between said two or more operating members and said section for actuation near said predetermined location in said gage.

[0029] Since according to this invention a player gazes at a predetermined location in a gage and strives for grasp of actuation timing, when said quota information presentation means presents information near that predetermined location, movement magnitude of a look of a player at the time of checking that information can be held down to min, and a player can play a game more comfortably.

[0030] Invention of claim 16 is set to a game system according to claim 9 or 10. A quota modification means to change correspondence relation of said two or more operating members and section for actuation of a predetermined number used on a game according to directions from a player, It is characterized by forming a renewal means of data to update said quota data recorded on said storage according to modification of assignment by said quota modification means in said game control unit (11).

[0031] Since a player makes a setting change of the correspondence relation of said two or more operating members and section for actuation of a predetermined number used on a game according to that liking according to this invention, a player can play more comfortably.

[0032] Invention of claim 17 Actuation timing data which defined actuation timing in a game about each of the section for actuation of a predetermined number assigned to a part of two or more operating members [at least] (PB1-PB14, PB21-PB31) prepared in an input unit (52A, 52B) of a game system, A computer (11) formed in said game system It is the storage (44 13) with which a program for making it function as a game control unit which performs a game according to a

predetermined procedure, referring to an output signal and said actuation timing data from said input unit was recorded and in which computer reading is possible. Said program Said computer is based on said actuation timing data during activation of said game. Each of the section for actuation of said predetermined number with said actuation timing data An operator guidance means to display an image it is directed that operates it to defined timing on a screen of a display of said game system; The 1st mode in which the number of said sections for actuation used in said game is set as said predetermined number, A mode selection means to choose from said predetermined number either of the 2nd mode restricted to a small number according to directions from a player; When said game is performed in said 2nd mode, So that only actuation of a number smaller than said predetermined number of sections for actuation may be directed An operator guidance limit means to change said image which is displayed by said operator guidance means and to direct; actuation of said input unit of said player performed to directions from said operator guidance means With a storage (44 13) which was constituted so that it might be made to function as an evaluation information means to tell said player about information relevant to an evaluation result by evaluation means; evaluated based on said actuation timing data, and said evaluation means and in which computer reading is possible A technical problem mentioned above is solved.

[0033] According to this invention, a game system of invention of claim 1 is realizable by making a computer read a program recorded on a storage, and performing it.

[0034] It assigns. invention of claim 18 defined correspondence relation between two or more operating members (PB1-PB14, PB21-PB31) on an input unit (52A, 52B) prepared in a game system, and the section for actuation of a predetermined number used on a game -- with data Actuation timing data which defined actuation timing in a game about each of said section for actuation, A computer (11) formed in said game system An output signal from said input unit, It is the storage (44 13) with which a program for making it function as a game control unit which performs a game according to a predetermined procedure, referring to said quota data and said actuation timing data was recorded and in which computer reading is possible. Said program Said computer is based on said actuation timing data during activation of said game. Each of the section for actuation of said predetermined number with said actuation timing data An operator guidance means to display an image it is directed that operates it to defined timing on a screen of said display; actuation of said input unit of said player performed to directions from said operator guidance means An evaluation means to evaluate based on data which defined said actuation timing; It is based on evaluation information means; which tells said player about information relevant to an evaluation result by said evaluation means, and said quota data. A technical problem mentioned above is solved with a storage (44 13) which was constituted so that it might be made to function as a quota information presentation means to show a player information for specifying relation between said two or more operating members and said section for actuation and in which computer reading is possible.

[0035] According to this invention, a game system of invention of claim 9 is realizable by making a computer read a program recorded on a storage, and performing it.

[0036]

[Embodiment of the Invention] Drawing 1 shows the gestalt which carried out this invention as a home video game system. In addition, a computer-game machine for home use has the configuration of drawing 1, and the details are indicated [general] by JP,8-212377,A.

[0037] The game system 1 of drawing 1 possesses the main control section 10, the graphic control section 20, the sound control section 30, the disk read station 40, and the communications control section 50, and each part 10-50 is connected mutually in Main Bath B. The main-control section 10 is equipped with CPU11 which is constituted considering a microprocessor as a subject and performs operation required for advance of a game, and control of each part, the peripheral device 12 which performs auxiliary control of the interrupt control to the CPU11, management of memory access, etc., the main memory 13 which consisted of rewritable semiconductor storage elements of RAM etc., and ROM14 which memorized the program for controlling fundamental actuation of the game system 1.

[0038] The graphic control section 20 follows directions from CPU11. A specific operation required for image drawing, For example, the geometry transfer engine 21 as a co-processor which performs the coordinate operation of the polygon for drawing a three-dimension image etc. (GTE), The graphics processing unit 22 which performs predetermined drawing processing according to the drawing instruction from CPU11 (GPU), It has the frame buffer 23 as a means to memorize temporarily the data which the GPU22 drew, and the image decoder (MDEC) 24 which decrypts the compressed data of the image which main memory 13 memorizes. During advance of a game, the image data recorded on CD-ROM44 as a storage is loaded to main memory 13 if needed, is decrypted by MDEC24, and is drawn by the frame buffer 23 by GPU22. And the field of the arbitration of the image frame drawn by the frame buffer 23 is displayed on a monitor 25 (for example, CRT of a home television set).

[0039] The sound control section 30 is equipped with the sound regeneration processor (SPU) 31 which generates musical sound, a sound effect, etc., the sound buffer 32 data, sound source data, etc., such as voice by which reading appearance was carried out from CD-ROM44, and musical sound, are remembered to be and which is 512 K bytes, for example, and the loudspeaker 33 as a sound output means to output the musical sound generated by SPU31, a sound effect, etc., based on the directions from CPU11.

[0040] SPU31 is equipped with the ADPCM decode function which reproduces the voice data by which adaptation differential encoding (ADPCM) was carried out considering 16-bit voice data as a 4-bit differential signal, the regenerative function which generates a sound effect etc. by reproducing the sound source data memorized by the sound buffer 32, the

modulation function which is made to modulate the voice data memorized by the sound buffer 32, and is reproduced. That is, SPU31 has functions, such as automatic conversion of the operational parameter which made looping and time amount the coefficient, builds in the ADPCE sound source which has the capacity of 24 voices, and operates by actuation from CPU11. Moreover, SPU31 manages the original address space where the sound buffer 32 was mapped, transmits ADPCM data to a sound buffer 32 from CPU11, and reproduces data by passing Keown / key-off, and MODEYURESHON information directly.

[0041] By having such a function, the sound control section 30 can be used now as the so-called sampling sound source which generates musical sound, a sound effect, etc. based on the voice data recorded on the sound buffer 32 with the directions from CPU11.

[0042] The disk read station 40 is equipped with the disk drive 41 which reproduces the program recorded on CD-ROM44, data, etc., and the decoder 42 which decodes the program on which the error correction (ECC) sign is added and recorded, data, etc. and 32 K bytes of buffer 43 which memorizes the playback data from a disk drive 41 temporarily. That is, the disk read station 40 consists of components required in order to read a disk drive 41 and the disk of decoder 42 grade. Here, they are CD-DA and CD-ROM as disk formatting. Data, such as XA, can be supported now. In addition, a decoder 42 functions also as a part of sound control section 30.

[0043] As voice data currently recorded on the disk played with a disk drive 41, there is the so-called PCM data which carried out analog-to-digital conversion of the sound signal other than above-mentioned ADPCM data (ADPCM data of CD-ROM XA etc.). As ADPCM data, the voice data currently recorded by expressing the difference of 16-bit digital data with 4 bits is supplied to SPU31, after an error correction and a decryption are made by the decoder 42, and after processing of a digital to analog etc. is performed by SPU31, since a loudspeaker 33 is driven, it is used. Moreover, as PCM data, after being decrypted by the decoder 42, since a loudspeaker 33 is driven, the voice data currently recorded as 16-bit digital data is used. In addition, the audio output of a decoder 42 once goes into SPU31, is mixed with this SPU output, and turns into the last audio output via liver gnat knitting.

[0044] The communications control section 50 is equipped with the communications control device 51 which controls a communication link between CPUs11 through Maine Bath B, the controller 52 as an actuation input means to have two or more operating members (for example, push button switch) operated by the player of a game, and the memory card (secondary memory data medium) 53 constituted by the subject in the rewritable semiconductor device in which storage maintenance is possible. From a controller 52, the signal which shows the actuation condition of an operating member is outputted a fixed period (for example, per second 60 times), and the output signal is transmitted to CPU11 through the communications control device 51. In addition, although drawing 1 showed only the controller 52 and memory card 53 of a lot, two or more connection ports are established in the communications control device 51. Installation and removal of a controller 52 and a memory card 53 are possible to each of each port.

[0045] Furthermore, the game system 1 has the parallel I/O (input/output) port 61 for connecting a peripheral device, and serial I/O Port 62. It is also possible to advance a game, being able to connect other game systems 1 to serial I/O Port 62 through a non-illustrated telecommunication cable, and communicating between two game systems 1 and 1 by the connection.

[0046] Drawing 2 and drawing 3 show the example of the controller with which it can equip to the communications control device 51. Drawing 2 shows the general-purpose controller shared in various kinds of games, (a) is a plan and (b) is front view. On the other hand, drawing 3 is the plan of the controller of the exclusive mold constituted according to the game performed by the game system of this operation gestalt. In the following explanation, it writes for the controller of drawing 2 exclusive controller 52B [general-purpose controller 52A and the controller of drawing 3], and when it's not necessary to distinguish both, it is written as a controller 52.

[0047] As shown in drawing 2, general-purpose controller 52A has main part 52a in which a stock is possible. Every four push button switches PB1-PB8 are formed in right and left of the upper surface of main part 52a, respectively. The left-hand side push button switches PB1-PB4 function as the so-called direction directions key which shows the direction of four directions, respectively. In addition, although the push button switches PB1-PB4 are carrying out mutually-independent in drawing 2, it replaces with this and an operational single actuation switch may be used in the direction of arbitration. The right-hand side push button switches PB5-PB8 are used for various kinds of command input, selection, decision, cancellation actuation, etc. Moreover, every two push button switches PB9-PB12 are formed in right and left of the front face of main part 52a, respectively. In order to distinguish each push button switch visually, a suitable indicator is formed in the push button switch PB [PB5-] 12 tops or those perimeters. In the example of illustration, the mark of O, **, **, and x is displayed on the push button switches PB5-PB8, respectively. A numeric character 1 is displayed on the push button switch PB9 and 11, a numeric character 2 is displayed on the push button switch PB10 and 12, respectively, the alphabetic character L is displayed above the push button switch PB9, and the alphabetic character R is displayed above the push button switch PB11, respectively. thereby -- a switch PB8 is grasped [a switch PB5 / x carbon button and a switch PB7] for ** carbon button and a switch PB6 as O carbon button, 9Lswitch PB1 carbon button, 10Lswitch PB2 carbon button, 11Rswitch PB1 carbon button, and 12Rswitch PB2 carbon button to a player to ** carbon button, respectively. Furthermore, the push button switches PB13 and PB14 are formed in the center of the upper surface of main part 52a. In the push button switch PB13, a select button and the push button switch PB14 function as a start button. In addition, although omitted in drawing 2, the input unit of the stick type which outputs the analog signal according to the actuation direction and a control input may be added to general-purpose

controller 52A. The vibrator which excites main part 52a may be built in.

[0048] On the other hand, as shown in drawing 3, exclusive controller 52B has main part 52b which carried out trapezoidal shape. Main part 52b is formed in the magnitude on condition of the use in a table. Nine circular push button switches PB21-PB29 divide into vertical 2 train, arrange in the upper surface of main part 52b, and are formed in it. The small push button switch 30 and PB 31 is formed above the push button switches PB21-PB29. These push button switch 30 and PB 31 functions as a select button and a start button, respectively like the push button switches PB13 and PB14 of general-purpose controller 52A mentioned above. The push button switches PB21-PB29 are colored any 1 color among five colors, respectively. for example, the switches PB21 and PB29 of lower train both ends -- white -- the switches PB23 and PB27 of those insides -- the switch 22 and PB 28 of upper train both ends is colored pink, and the inside switches PB24 and PB26 are colored light green for the switch PB25 of the center of a lower train light blue at yellow, respectively.

[0049] Although exclusive controller 52B outputs the signal for specifying the on-off condition of the push button switches 21-PB 31 in the condition of having connected with the communications control device 51 a fixed period, the distinction signal for combining with it and distinguishing exclusive controller 52B from general-purpose controller 52A is also outputted a fixed period. A distinction signal is a signal corresponding to the specific actuation condition of general-purpose controller 52A. For example, the signal equivalent to the output signal when carrying out depression actuation (ON) of the switches PB2, PB3, and PB4 to coincidence among the direction directions keys of general-purpose controller 52A is outputted as a distinction signal. The actuation condition to which a distinction signal is made to correspond does not have a possibility of being operated by coincidence in a game, or there may be, or you may choose it freely out of a very rare combination.

[0050] Various kinds of data required for the program and its activation of a game is written in CD-ROM44. If predetermined initialization actuation, for example, actuation of a non-illustrated electric power switch or a reset switch, is performed, CPU11 performs predetermined initialization processing according to the program of ROM14, after that, will read into main memory 13 the program and data which were recorded on CD-ROM44, and will start processing of a proper in a game. The outline of the game performed judges the actuation and it displays on a monitor 25 while it makes the sound effect according to the actuation output to BGM from a loudspeaker 33 in piles, when directions are taken out to a player through a monitor 25 so that the manual operation button on a controller 52 may be operated in the procedure according to the BGM, and a player operates a controller 52 to the directions, reproducing predetermined BGM from a loudspeaker 33. The details of a game are mentioned later.

[0051] Drawing 4 shows the fundamental game screen displayed on the screen of a monitor 25. The gage 101 for [of the game screen 100] directing the actuation timing of the manual operation button on a controller 52 to a player in the center is displayed mostly. The game is constituted from the premise played using nine manual operation buttons by this operation gestalt. Therefore, a gage 101 is logically classified into nine trucks 102a-102i which extend in the vertical direction. The timing mark 103--103 to show the actuation timing of the manual operation button corresponding to each is displayed on each trucks 102a-102i. In addition, the fictitious outline which divides the trucks 102a-102i of drawing 4 is not displayed on an actual screen. Moreover, this may be omitted although one Rhine 104--104 of the vertical direction is displayed at a time on each truck 102 in drawing 4.

[0052] Drawing 5 shows an example of the correspondence relation between each trucks 102a-102i and the push button switch on a controller 52. In drawing 5, manual operation button A-I is defined on a game as the section for actuation assigned on a controller 52 corresponding to the trucks 102a-102i of drawing 4, respectively. Since it may be used for the case where it is used independently, and 2 coincidence, about a general-purpose controller, "1P&2P" has shown the case where the case where it is used independently is used for "1P" and 2 coincidence. Incidentally, it means, respectively that "2P" is an object for the second person's players about "1P" being an object for the first person's players.

[0053] When using two general-purpose controller 52A so that clearly from drawing 5, five left-hand side trucks 102a-102e are matched with controller 52A by the side of 1P from truck 102e of the center in a gage 101 among nine trucks 102a-102i in a gage 101, and five right-hand side trucks 102e-102i are matched with controller 52A by the side of 2P, respectively. That is, when playing using two general-purpose controller 52A, it will carry out by two players sharing the actuation corresponding to the directions in truck 102a - 102i. In addition, the correspondence relation about general-purpose controller 52A is an example to the last, and two or more setup is prepared besides illustration. The data which defined those setup is beforehand memorized by CD-ROM44, and a setup according to liking and play environment of a player is read into main memory 13.

[0054] Since the number of Trucks 102a-102i and the number of the push button switches PB21-PB29 are equal on the other hand in exclusive controller 52B, Truck 102a at the left end of a screen corresponds to the push button switch PB21 at the left end of [lower train] controller 52B. 2nd truck 102b corresponds to the push button switch PB22 at the left end of an upper train from the left, and Trucks 102c-102i are hereafter matched with the push button switches PB23-PB29 according to those order of a list similarly. And in order to clarify correspondence relation between the push button switches PB21-PB29 and Trucks 102a-102i, the portion expressed in the same color as the push button switches PB21-PB29 with which each corresponds is prepared in Trucks 102a-102i. For example, it is expressed in the same color as the push button switches 21-PB 29 with which a part of timing mark [at least] 103 displayed each Rhine 104 in a gage 101 and on it corresponds.

[0055] If a game is started, a timing mark 103 will move caudad gradually in the inside of truck 102a - 102i according to control of CPU11. And when a timing mark 103 arrives at the lower limit of Trucks 102a-102i, the actuation timing of the manual operation button corresponding to the trucks 102a-102i comes. If a player depresses and operates the push button

switch with which it corresponds on a controller 52 according to this actuation timing, CPU11 will judge the quality of actuation based on the gap with the actuation timing directed by the timing mark 103, and the timing to which actuation was actually performed, and will display that judgment result on the judgment display 105--105 arranged in the lower limit of Trucks 102a-102i. The judgment display 105 imagines an elliptical manual operation button, and is put in order by vertical 2 train like the push button switches PB21-PB29 of exclusive controller 52B. And according to a judgment result, alphabetic characters, such as "COOL", "YES", and "WACK", are displayed on each judgment display 105. In addition, a judgment result may be displayed on the interior of a gage 101.

[0056] The score display 106 which displays the score (the example of illustration 1234 points) of a game is formed in the lower left of Screen 100. This score is a value calculated based on the judgment result for every actuation timing mentioned above. The title display 107 which displays the title of the contents of a stage or BGM is formed in the lower right of Screen 100. The character displays 108L and 108R are formed in the both sides of a gage 101, respectively. The animation of a game character etc. is displayed on these displays 108L and 108R. The character displayed changes according to BGM and the contents of animation change according to the judgment result for every actuation timing.

[0057] Drawing 6 and drawing 7 show the configuration of the data especially prepared in relation to playback of BGM, or the display control of a gage 101 among the data recorded on CD-ROM44. In this game system 1, two or more music is beforehand prepared as BGM used for a game, the data shown in drawing 6 (a) for every music of those is created, and it is recorded on CD-ROM44. The data of Music X contains a data point, wave table data, and performance data. A data point is data which defined the wave for reproducing Music X, and sound effect data is data which defined the sound generated when a controller 52 is operated in a game. These data is created as for example, PCM data or ADPCM data, and is recorded. Sound effect data was included in the data for every music for generating a suitable sound effect according to the class of BGM. Information required in order that wave table data may take out desired BGM and the data of a sound effect out of the data point mentioned above is described.

[0058] As shown in drawing 6 (b), performance data contains actuation timing data, automatic performance timing data, quota wave number data, and the II Tempo data. Actuation timing data is data which matched and specified the actuation timing of the operating member matched with Trucks 102a-102i, respectively as elapsed time from performance initiation of Music X. If it puts in another way, actuation timing data will be data which set up beforehand at which time of day under playback of Music X the push button switch of a controller 52 etc. should have been operated about each of Trucks 102a-102i. This actuation timing data serves as a base of the judgment to the display of a gage 101, or actuation of a controller 52.

[0059] Drawing 7 shows some actuation timing data in [each / of manual operation button A-I] timing diagram. The location of ON in drawing is equivalent to the timing which should operate manual operation button A-I, respectively. In actuation timing data, each actuation timing is specified at the progress time of day from the head of Music X according to the time-axis (equivalent to the horizontal axis in drawing) on the basis of the head of BGM. The music X as BGM consists of two or more phrases, and the break time of day t1 and t2 for every phrases of these and t3 -- are matched with the number of a phrase, and are recorded in actuation timing data. A phrase number is the serial number which sets the first phrase to 1 and is attached in order of the performance of a phrase.

[0060] The automatic performance timing data of drawing 6 (b) is prepared in order to generate a sound effect, even if there is no actuation of a controller 52. That is, automatic performance timing data is data which specified the timing which it is regarded [timing] as that by which manual operation button A-I was operated, and generates a sound effect at the progress time of day from the head of Music X. In addition, this automatic performance data is not necessarily required for activation of a game, and can be omitted.

[0061] Quota wave number data is data which specifies the relation between actuation of a controller 52 and a sound effect. Through the whole music X, regularity is sufficient as this relation and it may be changed to every suitable break (for example, phrase of Music X). Drawing 8 shows an example of the quota wave number data in the case of changing a sound effect for every phrase. By this data, each of manual operation button A-I and the sound effect which should make it generate for every phrase are matched. For example, if manual operation button A is observed, in the phrase 1, a sound effect 11 is assigned in a phrase 2, and the sound effect 1 is assigned for the sound effect 1 by the phrase 3, respectively. **** [actuation of the push button switch on the controller 52 defined as manual operation button A (for example, push button switch PB21 of exclusive controller 52B) / put / a sound effect 1 / therefore, / in a phrase 2 / in phrases 1 and 3 / on BGM / a sound effect 11]

[0062] The II Tempo data of drawing 6 (b) is data in which II Tempo of a performance of Music X is shown. When II Tempo changes in the middle of Music X, it matches with time amount from performance initiation, and II Tempo is recorded. With reference to this II Tempo data, the display rectangle of a gage 101 is controlled by this game system 1.

[0063] Drawing 9 shows the relation between the reading range of the actuation timing data under play of a game, and the display rectangle of a gage 101. The buffer area for a read ahead about actuation timing data is set to main memory 13 during the play of a game, and the actuation timing data from the current time tx when being based on a performance initiation time to time of day ty is read into the field. The actuation timing data of the range from current time tx to time of day tn (<ty) is further read into the buffer area for a display of main memory 13 among the data read into this read-ahead buffer area. Although the time amount from time of day tx to time of day tn is set up equally to two vibrant tunes of Music X, the time length changes according to performance II Tempo of Music X. Therefore, CPU11 determines the time of day tn after 2 vibrant tunes from current time tx with reference to the II Tempo data, and reads the actuation timing data to tn into the buffer

area for a display from time of day tx as a display rectangle of a gage 101. CPU11 follows the actuation timing data read into the buffer area for a display, calculates arrangement of the timing mark 103 in a gage 101, and creates the image data for displaying a gage 101 based on the result of an operation. When the graphic control section 20 updates the game screen 100 based on this image data, the gage 101 suitable for current time tx is displayed in the game screen 100. In addition, the time of day ty of read-ahead ***** may also be changed according to II Tempo of Music X. Not only an equivalent for two vibrant tunes but you may change variously the amount of readings to the buffer area for a display.

[0064] Drawing 10 is a flow chart which shows the main routine of the game processing which CPU11 performs according to the program recorded on CD-ROM44. In this processing, first, a predetermined start screen is displayed on the screen of a monitor 25 (step S1), and it distinguishes whether the start button of a controller 52 was operated continuously (step S2). A start screen is constituted like Screen 200 shown in drawing 11.

[0065] If a start button is operated where Screen 200 of drawing 11 is displayed, CPU11 will progress to step S3 of drawing 10, and will perform game start processing. The details are mentioned later. In addition, when there is no fixed time amount actuation in the phase of step S2, you may shift to the mode which displays a demonstration screen.

[0066] After processing of step S3 displays a mode selection screen on the screen of a monitor 25 (step S4). A mode selection screen is constituted like Screen 210 of drawing 12. Four, "START GAME", "FREE", "TRAINING", and "OPTION", are displayed on this screen 210 as alternative of a player. A player's selection of four to any these one mode performs processing according to the mode (either the step S5 -> step S6 - S9).

[0067] That is, when "START GAME" is chosen, game mode processing is performed (step S6). In this mode, if one music (BGM) is cleared, a game will be advanced in the procedure of progressing to the following music. When "FREE" is chosen, free mode processing is performed (step S7). In this mode, a player can play favorite music. When "TRAINING" is chosen, training mode processing is performed (step S8). In this mode, a player can practice by setting a practice range as desired music. When "OPTION" is chosen, option setting processing is performed (step S9). In this mode, a player can perform a setup according to self liking about how to advance a game etc.

[0068] In option mode, Screen 220 shown in drawing 13 is displayed on a monitor 25. "GAME OPTION", "KEY CONFIG", "SOUND TEST", "RECORDS", "MEMORY CARD", and "OPTION RESET" are prepared for Screen 220 as a selectable setting item. When "KEY CONFIG" is chosen, a setting change of the correspondence relation between the switches PB1-PB12 of general-purpose controller 52A and the trucks 102a-102i of a gage 101 is made. When "SOUND TEST" is chosen, BGM can be chosen and it can reproduce. When "RECORDS" is chosen, record of the past game can be referred to. When "MEMORY CARD" is chosen, the save and loading of data (for example, setting condition of the past play career or various option items) over a memory card 53 can be performed. When "OPTION RESET" is chosen, each setting item can be returned to an initial state. When "GAME OPTION" is chosen, Screen 230 of drawing 14 is displayed further.

[0069] "GAME LEVEL", "SOUND MODE", "BGM VOLUME", "SE VOLUME", "CONTROLLER 1P", "CONTROLLER 2P", "VIBRATION", and "BUTTON MODE" are prepared for Screen 230 as a selectable setting item. When "GAMELEVEL" is chosen, the difficulty of a game can be chosen from several steps. When "SOUND MODE" is chosen, a monophonic recording or a stereo can be chosen about the playback mode of BGM. When "BGM VOLUME" or "SE VOLUME" is chosen, BGM or the playback sound volume of a sound effect can be chosen. When "CONTROLLER 1P" or "CONTROLLER 2P" are chosen, as a controller 52 for the object for 1P, or 2P, it can set up any shall be used between general-purpose controller 52A or exclusive controller 52B. When "VIBRATION" is chosen, the excitation mode by the vibrator can be chosen only within the case where vibrator is built in the controller 52. Four, "MISS" excited when actuation of "BEAT SYNC" which excites controller 52A as excitation mode according to the rhythm of BGM, "BUTTON" which answers actuation of a controller 52 and is excited, and a player is judged to be failure actuation in which predetermined tolerance is not arrived at, and "NO USE" which forbids excitation, are prepared.

[0070] When "BUTTON MODE" is chosen, either 5 carbon-button mode (the 2nd mode) in which the number of the manual operation buttons used in a game is restricted to five pieces, or 9 carbon-button mode (the 1st mode) which uses all of nine manual operation buttons can be chosen. When 5 carbon-button mode is chosen, the actuation corresponding to every two trucks 102a, 102b, 102h, and 102i becomes unnecessary from the both ends of a gage 101. The player which the difficulty of a game falls and is not used to a game by this is also provided with comfortable play environment. In addition, 7 carbon-button mode in which the number of a manual operation button was restricted to seven pieces as the mode which reduced the number of manual operation buttons besides 5 carbon-button mode, having used actuation corresponding to every one trucks 102a and 102i as unnecessary from the both ends of a gage 101 etc. may be formed. All the setting items in the option processing explained above are recorded on main memory 13 as play conditions. And according to directions of a player, it is saved also at a memory card 53. In addition, the 1st mode is chosen in the default setting at the time of performing predetermined initialization actuation to the game system 1.

[0071] After processing of either step S6 of drawing 10 - step S9 finishes, CPU11 returns processing to step S4 of drawing 10, displays Screen 210 of drawing 12 on a monitor 25, and waits for the next processing by the player.

[0072] Drawing 15 is a flow chart which shows the details of the game start processing performed at step S3 of drawing 10. This processing is prepared so that the play environment with an unfamiliar suitable player for a game can be set up. CPU11 distinguishes [which starts game start processing] whether it is not rich, the signal from the communications control device 51 is read, and exclusive controller 52B is connected (step S11). When not connecting, it distinguishes whether general-purpose controller 52A is connected to both by the side of 1P and 2P to the communications control device 51.

Arbitrarily, the method of the connection confirm of exclusive controller 52B prepares a circuit special to the exclusive controller 52B side, and when there is a demand signal from CPU11, what answers a letter in a specific signal is mentioned by it. And when negative judgment is carried out (i.e., when the controller 52 is connected only to the 1P side), it progresses to step S13, and it distinguishes whether the career played in 9 carbon-button mode to the memory card 53 is recorded. When career is not recorded (it contains also when data cannot be read), it checks whether Screen 300 of drawing 16 is displayed on a monitor 25, and it plays in 5 carbon-button mode (step S14), and it waits for selection of a player continuously (step S15). If a player chooses by operating a controller 52, it will distinguish whether 5 carbon-button mode was chosen (step S16). And when 5 carbon-button mode is chosen, the play by 5 carbon-button mode is turned on (step S17), otherwise, the play by 5 carbon-button mode is turned off (step S18). Then, it returns to processing of drawing 10. In addition, what is necessary is to make it choose it as a player whether it plays in which the mode at step S16, and just to turn ON the mode according to the selection result, when ***** for example, of 7 carbon-button mode is made possible by option setting processing (step S9) of drawing 10 besides 5 carbon-button mode and 9 carbon-button mode.

[0073] When it is judged that exclusive controller 52B is connected at step S11, it checks to a player whether Screen 310 of drawing 17 is displayed on a monitor 25, and it plays by the exclusive controller (step S21), and it waits for selection of a player (step S22). If a player chooses by operating a controller 52, it will distinguish whether use of an exclusive controller was chosen (step S23). When affirmative judgment of step S23 is carried out, it registers into main memory 13 that exclusive controller 52B is used about the side (1P or 2P) to which exclusive controller 52B was connected as information about a controller (step S24). This registration processing is equal to the processing performed when exclusive controller 52B is chosen by "CONTROLLER 1P" or "CONTROLLER 2P" in Screen 230 of drawing 14.

[0074] After registering use of exclusive controller 52B at step S24, when negative judgment is carried out at step S23, it progresses to step S25, and distinguishes whether the controller 52 is connected only to the 1P side of the communications control device 51. If it is only 1P, it will progress to step S13, otherwise, game start processing is finished, and it returns to processing of drawing 10.

[0075] When it is judged that general-purpose controller 52A is connected to both 1P and 2P at step S12, Screen 320 of drawing 18 is displayed on a monitor 25. It checks to a player whether "recommended setting for a two-person play" is used about the correspondence relation between the push button switches PB1-PB12 on general-purpose controller 52A, and manual operation button A-I on a game (step S31), and waits for selection of a player (step S32). If a player chooses by operating a controller 52, it will judge whether it consented to use of "recommended setting for a two-person play" (step S33). And when it consents, the correspondence relation between the push button switches PB1-PB12 on general-purpose controller 52A of 1P and 2P and manual operation button A-I on a game is set as the condition of having been beforehand set as default setting for a two-person play (step S34). When negative judgment is carried out after termination of step S34, or at step S33, game start processing is finished, and it returns to processing of drawing 10.

[0076] Drawing 19 is the flow chart which showed the procedure of the game processing which CPU11 performs about the play of one music BGM, when game mode or the free mode is chosen in drawing 10. When starting the play about one music, CPU11 reads the play conditions first recorded on main memory 13, distinguishes the contents (step S51), and it loads data (for example, actuation timing data etc.) required for a play to main memory 13 from CD-ROM44 continuously (step S52). Then, current carbon button mode is checked (step S53), and 5 carbon-button mode judges whether it is ON (step S54). Processing required in order to treat the actuation timing data about manual operation buttons A, B, H, and I as automatic performance data is performed at the time of ON (step S55). For example, the actuation timing defined as the timing of an automatic performance of the automatic performance data currently beforehand created about manual operation buttons A, B, H, and I by actuation timing data is added.

[0077] Then, the display of guidance of processing required for game initiation, for example, a game start, etc. is performed (step S56), it points so that the data point of BGM may be passed to the sound control section 30 from the disk read station 40 following it, and that playback is made to start (step S57). Subsequently, the time check for specifying the elapsed time from performance initiation is started (step S58).

[0078] At continuing step S59, current time is detected and it judges whether the time of day corresponds to the automatic performance timing about either of manual operation button A-I (step S60). If it is automatic performance timing, the sound effect corresponding to the manual operation button A-I will be generated (step S61). If 5 carbon-button mode is turned on at this time, the sound effect which is not generated by processing of step S55 unless it originally operates manual operation buttons A, B, H, or I will be generated automatically.

[0079] When it is judged after processing of step S61, or at step S60 that it is not automatic performance timing, the data (for example, coordinate of a timing mark 103) for displaying the gage 101 corresponding to current time on a monitor 25 is created based on actuation timing data (step S62), and the display of a gage 101 is updated based on the data (step S63). When 5 carbon-button mode is ON, processing of dropping the lightness of the trucks 102a, 102b, 102h, and 102i corresponding to manual operation buttons A, B, H, and I, as shown in drawing 22 is added, and a player is made to recognize that actuation of the push button switch corresponding to these trucks is unnecessary here. However, based on actuation timing data, a timing mark 103 is displayed also about these trucks 102a, 102b, 102h, and 102i.

[0080] After renewal of the display of a gage 101 distinguishes whether the play progressed or not based on current time to the performance termination location of BGM at step S64, and when it is not a termination location, it returns to step S59. If it is a practice termination location, a predetermined post process will be performed (step S65), and processing of one music

will be finished.

[0081] Drawing 20 is a flow chart which shows the actuation judging processing which CPU11 performs in parallel to while processing of step S59 - step S64 is repeated in processing of drawing 19. In this processing, it distinguishes whether the player operated one of manual operation button A-I first (step S81), and if there is actuation, that actuation time of day will be detected (step S82). Then, the sound effect currently assigned to the operated carbon button is generated from a loudspeaker 33 (step S83).

[0082] At the following step S84, the time gap with the actuation timing (however, it restricts to the actuation timing about the actually operated manual operation button) nearest to current time is detected among the actuation timing specified as the actuation time of day detected at step S82 by actuation timing data. And based on the detected gap, the quality of actuation is divided into several steps and judged (step S85). At continuing step S86, the alphabetic character according to a judgment result etc. is displayed on the judgment display 105 following it as the truck 102 corresponding to the carbon button with which actuation of Screen 100 was performed (refer to drawing 4 and drawing 22).

[0083] At continuing step S87, the score from performance initiation to current is calculated according to the judgment result of step S85. For example, a standard position is established in a judgment result, and it adjusts so that it adds points at the time of a good judgment result, giving a demerit mark etc. carries out at the time of a judgment result inferior on the contrary, each actuation is superior to it, and a score may become high. And it distinguishes whether it is play termination at step S88, and when it judges that it has not ended yet and is judged as return and termination to step S81, actuation judging processing is finished. Although automatic performance data was created in drawing 19 and drawing 20 corresponding to 5 carbon-button mode, otherwise, the judgment routine of drawing 20 may be changed and you may correspond to 5 carbon-button mode. That is, about the actuation timing data corresponding to manual operation buttons A, B, H, and I, it may process as what omitted the judgment of steps S81 and S82, and was operated by the best actuation timing, and processing after step S83 may be performed.

[0084] Moreover, if a select button is depressed and operated as the player is playing by general-purpose controller 52A, CPU11 will interrupt and perform processing of drawing 21. This processing is for changing whether the information for making the judgment display 105 of the lower part of a gage 101 identify the assignment of the push button switches PB1-PB12 to each trucks 102a-102i is displayed, as shown in drawing 22 and drawing 23. In addition, manual operation buttons PB9-PB12 are expressed by drawing 22 and the example of a screen of drawing 23 L1, L2, R1, and R2, respectively by mark ** by which manual operation buttons PB5-PB8 were given for manual operation buttons PB1-PB4 to them by the arrow head of the direction of four directions, x, **, and O. An example when playing drawing 22 in 5 carbon-button mode, and drawing 23 show the example when playing in 9 carbon-button mode, respectively. However, any example is a thing when controller 52A is connected only to 1P.

[0085] If processing of drawing 21 is started, CPU11 will distinguish whether the select button of the controller 52 by the side of 1P was first pushed at step S101. When it is judged as the 1P side, it progresses to step S102, and it distinguishes in the no as which assignment of a manual operation button is displayed about controller 52A by the side of current and 1P. If not displayed, assignment of manual operation button A-I on the game to manual operation buttons PB1-PB12 is distinguished from the play conditions recorded on main memory 13 (step S103), and the information for making a judgment display identify assignment of each push button switches PB1-PB12 based on the distinction result is displayed (step S104). On the other hand, when it is judged as under a current display at step S102, the display is stopped at step S105.

[0086] When it judges that it is not actuation by the side of 1P at step S101, the same processing as the above is performed about the push button switches PB1-PB12 of controller 52A by the side of 2P (steps S106-S109). And interruption processing is ended with activation of steps S104, S105, S108, or S109.

[0087] With the above operation gestalt, when step S3 is performed immediately after starting the main routine of drawing 10, and when "CONTROLLER 1P" or "CONTROLLER 2P" are chosen by option setting processing of step S9, it becomes selectable any shall be used as a controller 52 between general-purpose controller 52A or exclusive controller 52B. Therefore, unless it performs option setting processing or initialization actuation of a game is performed, a game system cannot be made to recognize the change to general-purpose controller 52A and exclusive controller 52B, after a main routine is once started and processing of step S3 is performed. However, general-purpose controller 52A and exclusive controller 52B may be substituted to the communications control device 51 also in the middle of the play of a game in fact.

[0088] In such a case, what is necessary is to judge that the controller 52 was substituted and just to perform processing of drawing 24, when change of the distinction signal outputted from exclusive controller 52B is periodically supervised by CPU11 and it changes (i.e., when a distinction signal is newly detected or the distinction signal detected till then stops), in order to have made registration of a controller 52 change automatically. In this processing, when it is judged that it distinguished and exclusive controller 52B was connected whether exclusive controller 52B was newly first connected at step S121, assignment of manual operation button A-I to a controller 52 is changed into a setup for exclusive controllers (step S122). On the other hand, when it is judged that general-purpose controller 52A was connected at step S121, assignment of manual operation button A-I to a controller 52 is changed into the default setting for general-purpose controllers (step S123). Default setting is set up as shown in drawing 5. Or in step S123, you may return to a setup before memorizing. In addition, when it constitutes so that a setup of a controller can be switched automatically as mentioned above, the setting item of a controller may be omitted in option setting processing.

[0089] Drawing 25 is the example which added the subdisplay 70 to the communications control section 50. The subdisplay

70 is equipped with the drive circuit which controls LCD (liquid crystal display) and its display, for example, is attached on general-purpose controller 52A. According to control of CPU11, Screen 400 of drawing 26 (a) is displayed on such a subdisplay 70. Nine Rhine 401a-401i which symbolizes the trucks 102a-102i of the gage 101 mentioned above, and the quota displays 402a-402i of the approximate circle form which symbolizes the judgment display 105 are formed in Screen 400. And images, such as a mark which shows the push button switches PB1-PB12 on general-purpose controller 52A matched with each trucks 102a-102i, an alphabetic character, and a numeric character, are displayed on the inside of quota display 402a - 402i, or its near. Thereby, the correspondence relation between Trucks 102a-102i and the push button switches PB1-PB12 can be checked now on controller 52A. Preferably, when the push button switches PB1-PB12 are operated, it is good to give change to the display of the quota displays 402a-402i corresponding to the push button switches PB1-PB12. Drawing 26 (b) shows the condition of having assigned corresponding to actuation of the push button switch PB3 (referring to drawing 2), and having changed the gradation of display 402c. Since the subindicating equipment 70 of dedication will be formed to each controller 52A when two or more connection of the general-purpose controller 52A is made, the quota condition of manual operation button A-I to each controller 52A can be displayed on each subindicating equipment 70.

[0090] Although the above operation gestalt explained the case where this invention was applied to the game which consisted of premises which use nine manual operation buttons, naturally this invention is applicable also to the other game system. For example, the number of a manual operation button is good by the number not only of nine pieces but arbitration. a manual operation button -- adding -- rotation -- an operational table etc. may be prepared as an operating member.

[0091] At the above operation gestalt, it functions by combination with the software of specification [CPU11] as an operator-guidance means, a mode-selection means, an operator-guidance limit means, an evaluation means, an evaluation information means, a music playback directions means, a sound effect output directions means, a sound effect auto-output directions means, a mode check means check control means, a quota information presentation means, an information-display selection means, a quota information-display control means, a quota modification means, and a renewal means of data. However, a part of these means [at least] may be replaced by the logical circuit using LSI etc.

[Translation done.]

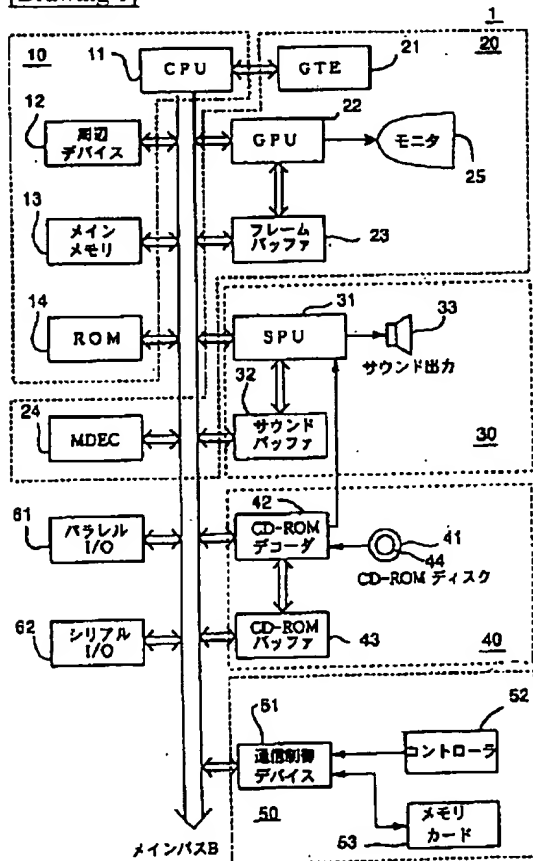
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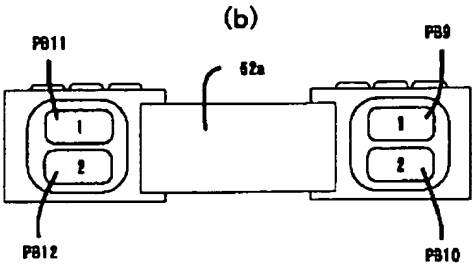
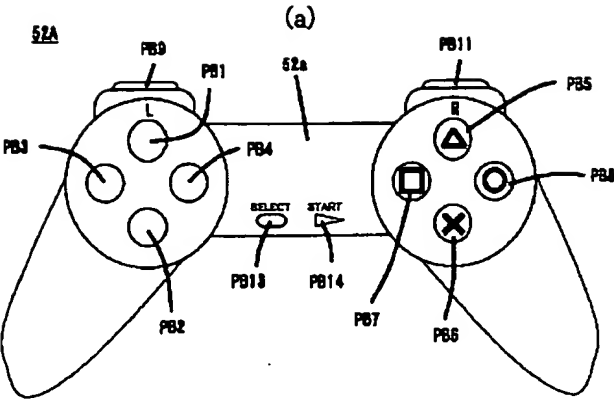
1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DRAWINGS

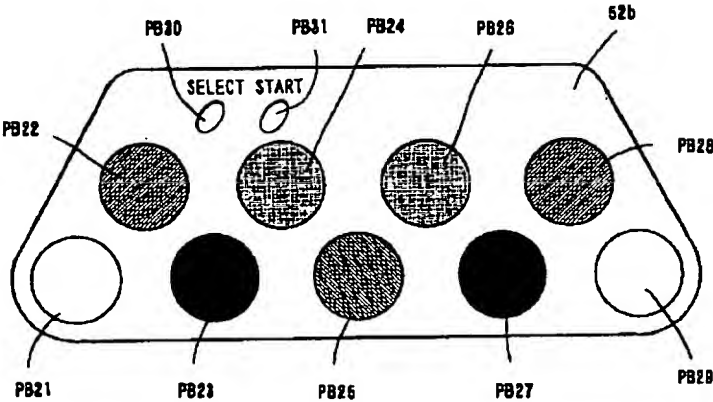
[Drawing 1]



[Drawing 2]



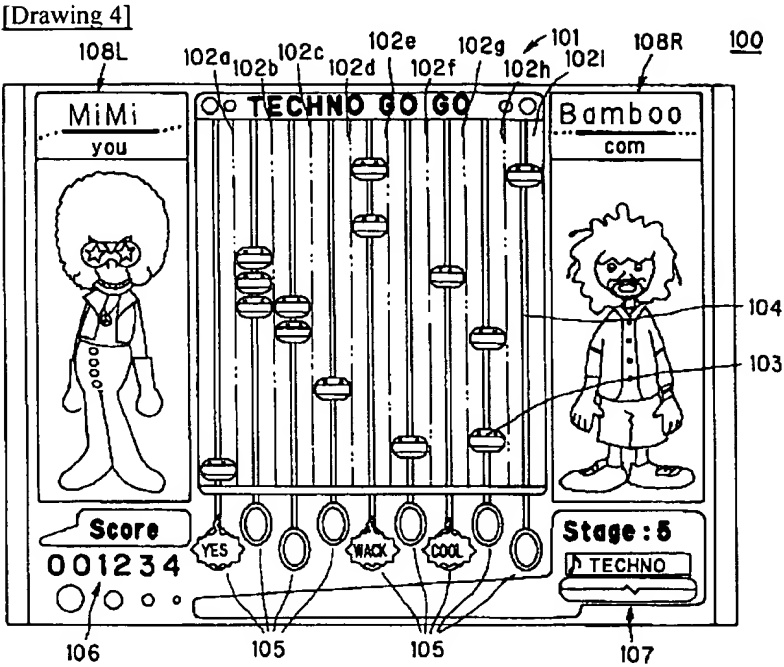
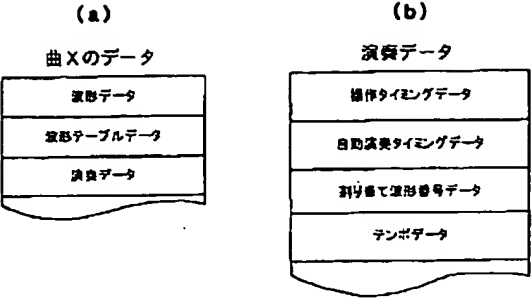
[Drawing 3]
52B



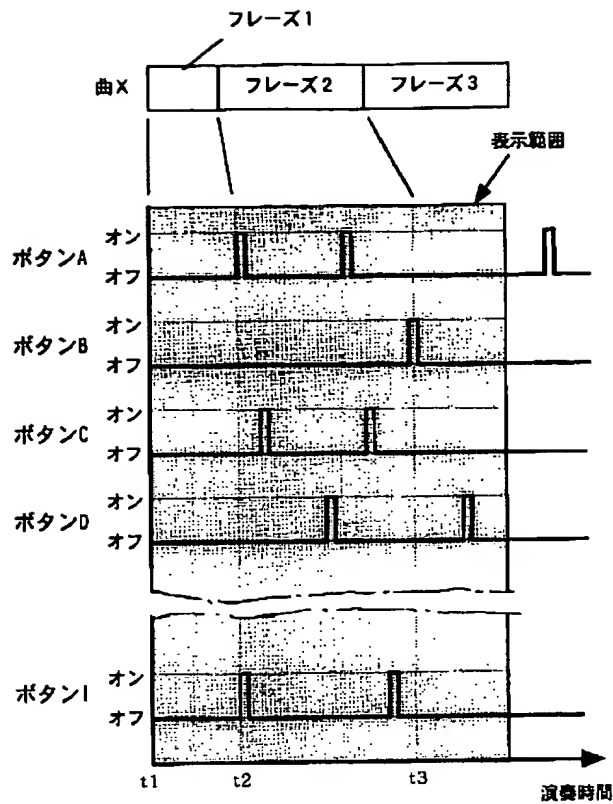
[Drawing 5]

操作ボタン	汎用コントローラ(1P)	汎用コントローラ(1P&2P)		専用コントローラ
		1P	2P	
A	PB10	PB3		PB21
B	PB9	PB1		PB22
C	PB3	PB4, 7		PB23
D	PB1, 2	PB5		PB24
E	PB4, 7	PB8	PB3	PB25
F	PB5, 6		PB1	PB26
G	PB8		PB4, 7	PB27
H	PB11		PB5	PB28
I	PB12		PB8	PB29

[Drawing 6]



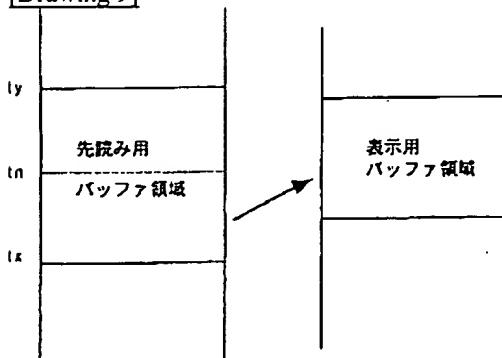
[Drawing 7]



[Drawing 8]

	フレーズ1	フレーズ2	フレーズ3
操作ボタンA	効果音 1	効果音 1 1	効果音 1
操作ボタンB	効果音 2	効果音 1 2	効果音 2
操作ボタンC	効果音 3	効果音 1 3	効果音 3
操作ボタンD	効果音 4	効果音 1 4	効果音 4
操作ボタンI	効果音 9	効果音 1 9	効果音 1 6

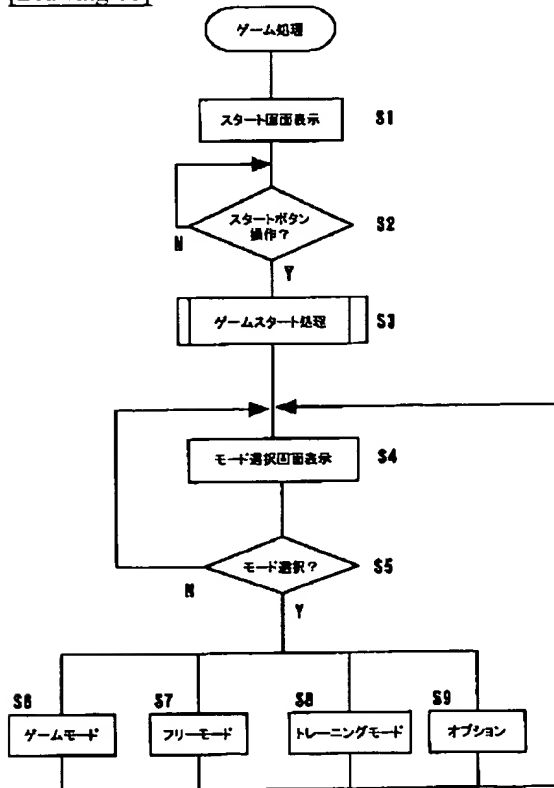
[Drawing 9]



[Drawing 11]



[Drawing 10]



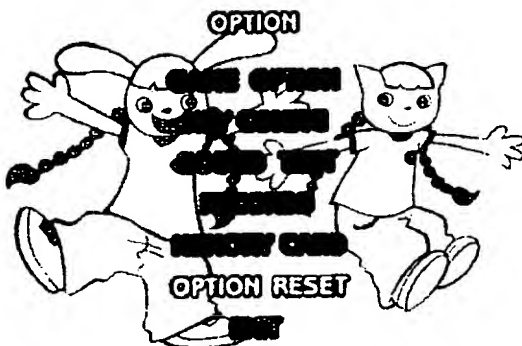
[Drawing 12]

210



[Drawing 13]

220

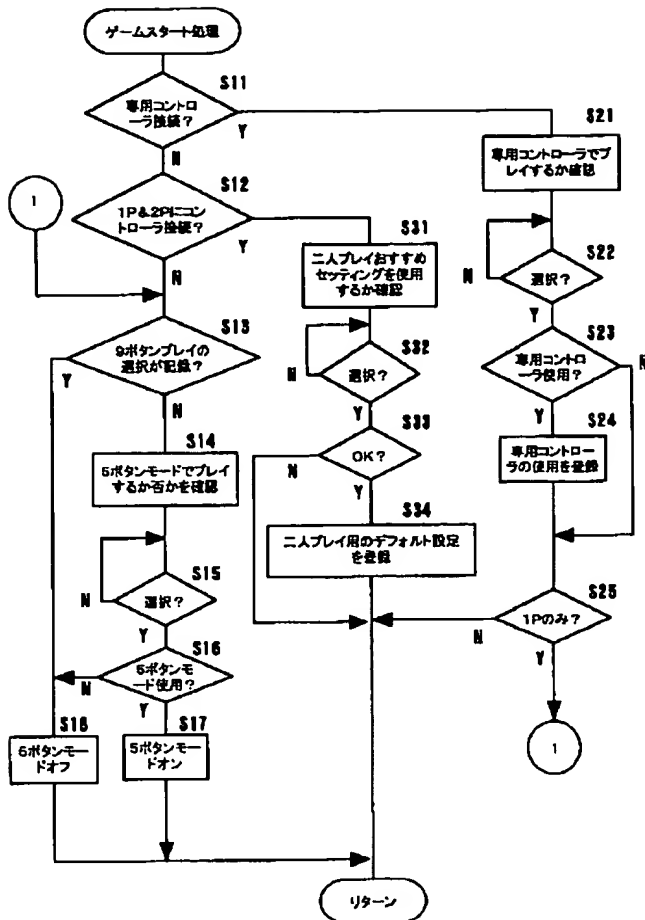


[Drawing 14]

230

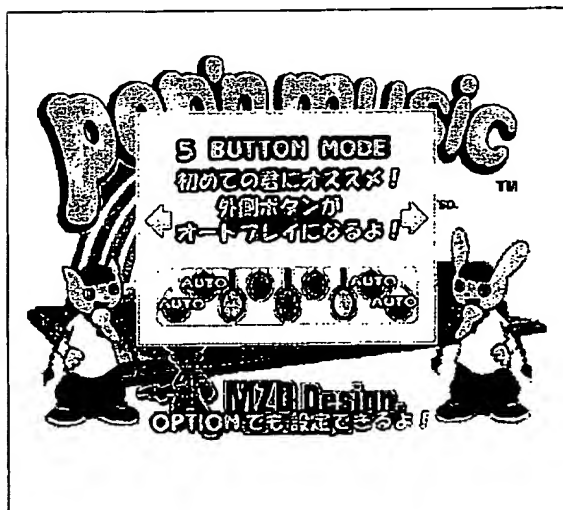


[Drawing 15]



[Drawing 16]

300



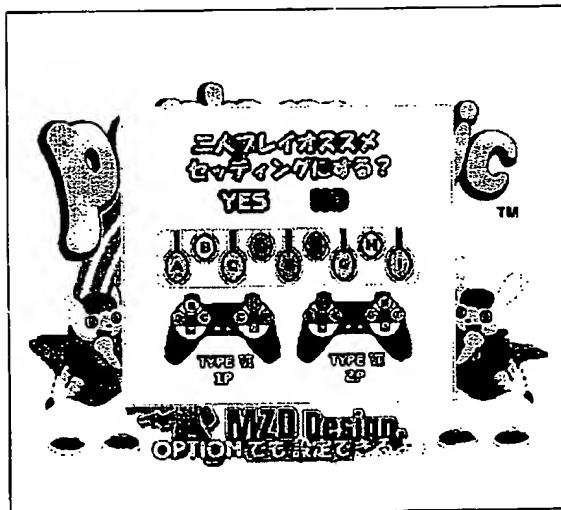
[Drawing 17]

310

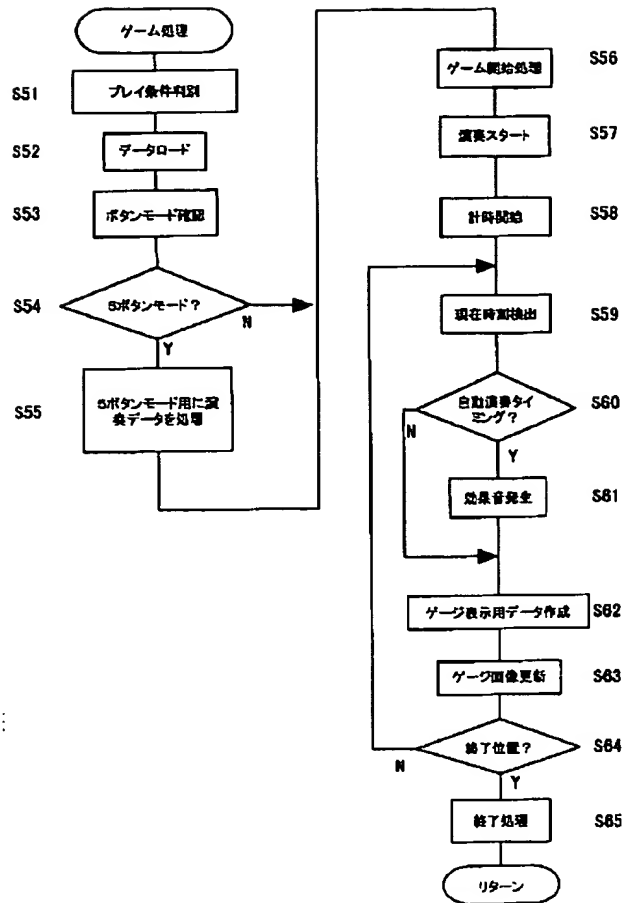


[Drawing 18]

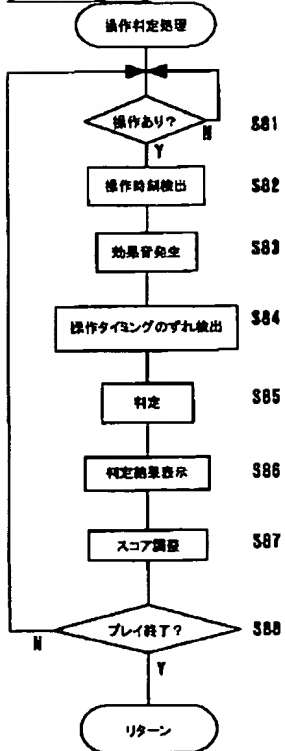
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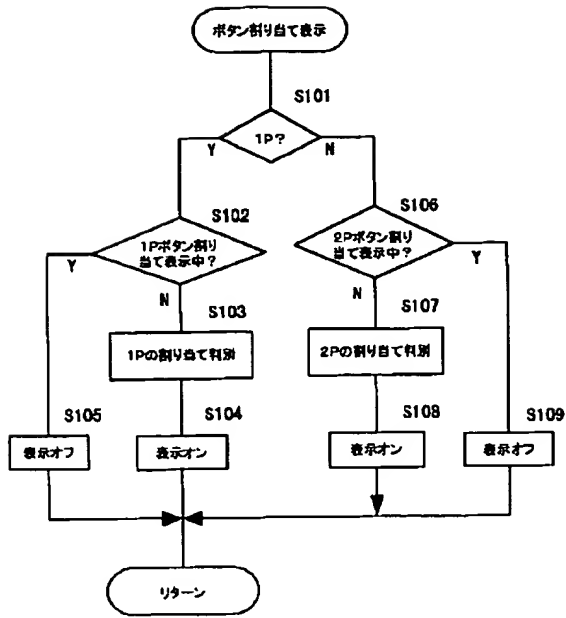
[Drawing 19]



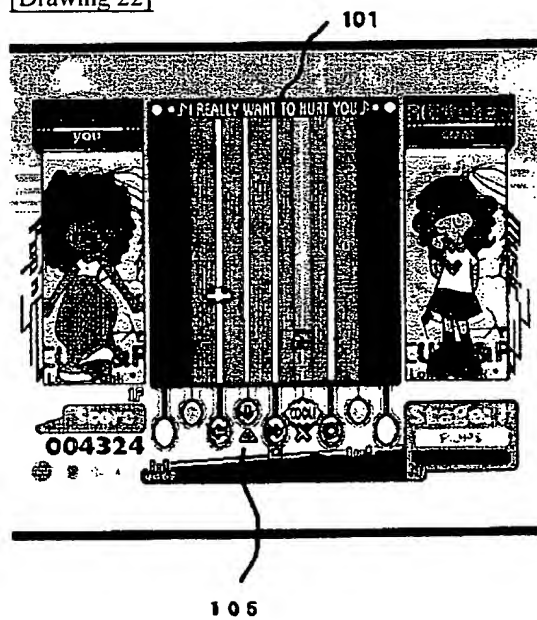
[Drawing 20]



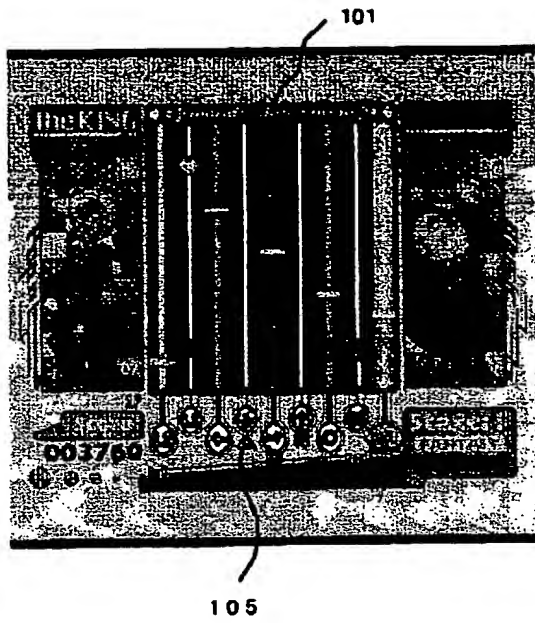
[Drawing 21]



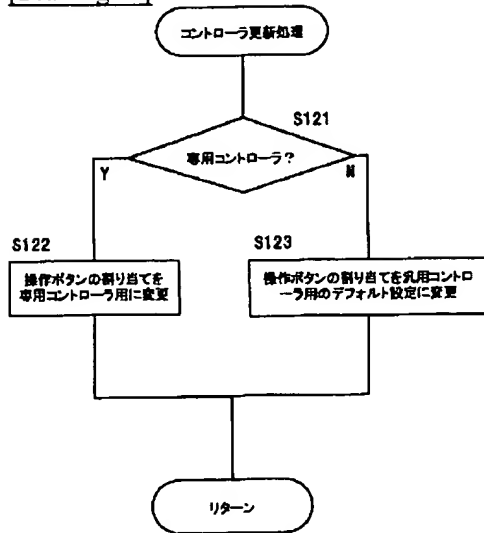
[Drawing 22]



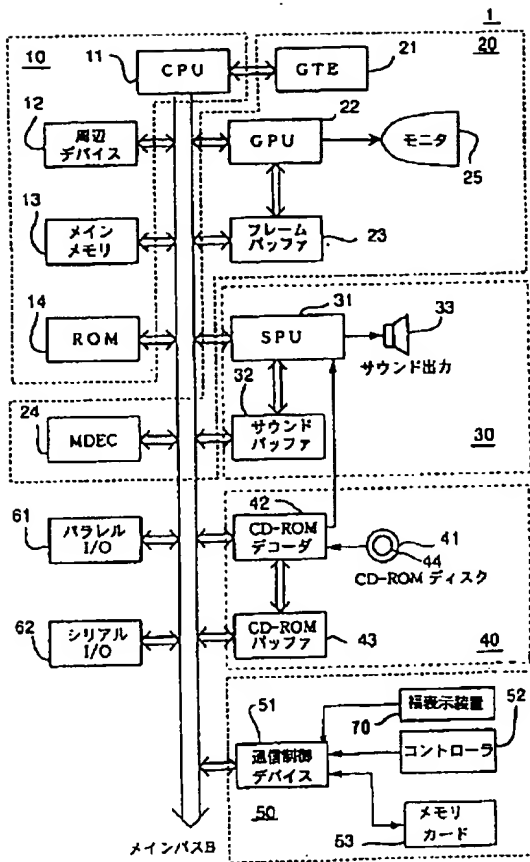
[Drawing 23]



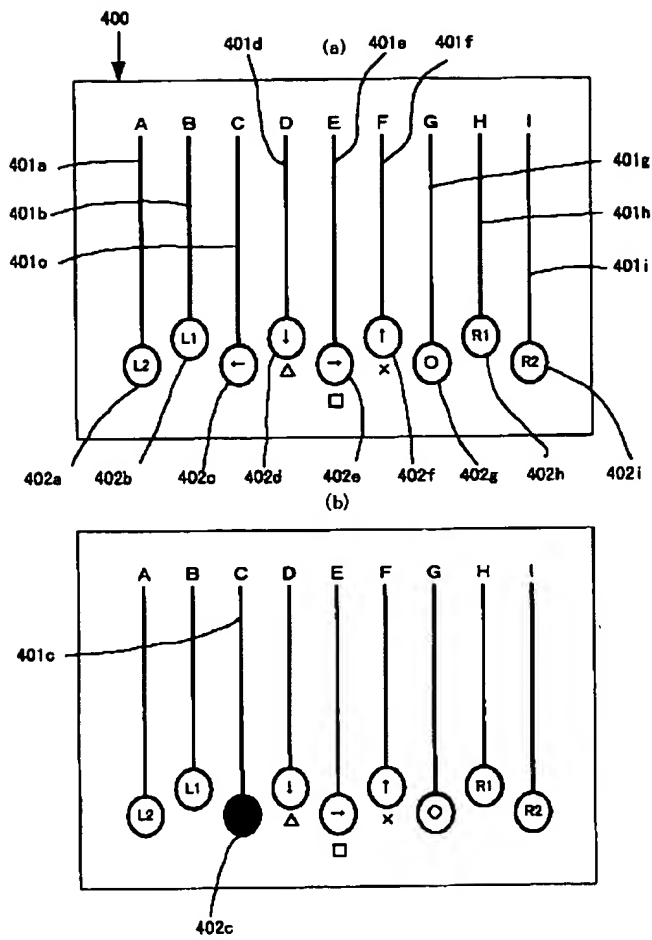
[Drawing 24]



[Drawing 25]



[Drawing 26]



[Translation done.]